

5189-2.ST25.txt
SEQUENCE LISTING

<110> Axenovich, Sergey
Stull, Robert
Gelman, Marina
Chui, Kitty
Ng, Dean

<120> DIAGNOSTIC METHODS FOR CANCER DETECTION

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<140> not yet assigned

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<151> 2003-05-19

<150> 60/381619

<151> 2002-05-17

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5189-2.ST25.txt

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5189-2.ST25.txt

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5189-2.ST25.txt

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180 185 190

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5189-2.ST25.txt

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Glu Ala Gly Thr Ala Val Val Tyr Thr Cys Ser Leu Asp Gly Ile Val
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5189-2.ST25.txt

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5189-2.ST25.txt

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Gln	Pro	Leu	Gly	Arg	Ala	Ile	Cys	Ile	Val	Asp	Val	Cys	His	Ala	Leu		
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5189-2.ST25.txt

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acc Thr	cgg Arg	cag Gln	gca Ala 770	cca Pro	aag Lys	cag Gln	gtc Val	atc Ile 775	aag Lys	cca Pro	acg Thr	ttc Phe	gca Ala 780	ccc Pro	cca Pro	2355
gtg Val	ccc Pro	cca Pro 785	gtc Val	aaa Lys	ccc Pro	ggg Gly	gct Ala 790	ggg Gly	gcg Ala	gcc Ala	aac Asn	cct Pro 795	ggg Gly	cca Pro	gct Ala	2403
gag Glu 800	ggg Gly	gct Ala	gtt Val	ggc Gly	cca Pro	aag Lys 805	gtt Val	gcc Ala	ctg Leu	aag Lys	ccc Pro 810	ccc Pro	atc Ile	cag Gln	agg Arg	2451
aag Lys 815	caa Gln	gga Gly	gcc Ala	gga Gly	gct Ala 820	ccc Pro	aca Thr	gca Ala	ccc Pro	tag	gggggcac	cct	gcgcctgtgt			2504
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5189-2.ST25.txt

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Leu Pro Arg Arg Leu Pro Gly Pro Arg Val Arg Arg Ala Leu Pro Ser
35 40 45

His Leu Gly Leu His Pro Glu Arg Val Ser Tyr Val Leu Gly Ala Thr
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Gly His Asn Phe Thr Leu His Leu Arg Lys Asn Arg Asp Leu Leu Gly
65 70 75 80

Ser Gly Tyr Thr Glu Thr Tyr Thr Ala Ala Asn Gly Ser Glu Val Thr
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Glu Gln Pro Arg Gly Gln Asp His Cys Leu Tyr Gln Gly His Val Glu
100 105 110

Gly Tyr Pro Asp Ser Ala Ala Ser Leu Ser Thr Cys Ala Gly Leu Arg
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5189-2.ST25.txt

Gly Phe Phe Gln Val Gly Ser Asp Leu His Leu Ile Glu Pro Leu Asp
130 135 140

Glu Gly Gly Glu Gly Gly Arg His Ala Val Tyr Gln Ala Glu His Leu
145 150 155 160

Leu Gln Thr Ala Gly Thr Cys Gly Val Ser Asp Asp Ser Leu Gly Ser
165 170 175

Leu Leu Gly Pro Arg Thr Ala Ala Val Phe Arg Pro Arg Pro Gly Asp
180 185 190

Ser Leu Pro Ser Arg Glu Thr Arg Tyr Val Glu Leu Tyr Val Val Val
195 200 205

Asp Asn Ala Glu Phe Gln Met Leu Gly Ser Glu Ala Ala Val Arg His
210 215 220

Arg Val Leu Glu Val Val Asn His Val Asp Lys Leu Tyr Gln Lys Leu
225 230 235 240

Asn Phe Arg Val Val Leu Val Gly Leu Glu Ile Trp Asn Ser Gln Asp
245 250 255

Arg Phe His Val Ser Pro Asp Pro Ser Val Thr Leu Glu Asn Leu Leu
260 265 270

Thr Trp Gln Ala Arg Gln Arg Thr Arg Arg His Leu His Asp Asn Val
275 280 285

Gln Leu Ile Thr Gly Val Asp Phe Thr Gly Thr Thr Val Gly Phe Ala
290 295 300

Arg Val Ser Ala Met Cys Ser His Ser Ser Gly Ala Val Asn Gln Asp
305 310 315 320

His Ser Lys Asn Pro Val Gly Val Ala Cys Thr Met Ala His Glu Met
325 330 335

Gly His Asn Leu Gly Met Asp His Asp Glu Asn Val Gln Gly Cys Arg
340 345 350

Cys Gln Glu Arg Phe Glu Ala Gly Arg Cys Ile Met Ala Gly Ser Ile
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Gly Ser Ser Phe Pro Arg Met Phe Ser Asp Cys Ser Gln Ala Tyr Leu
370 375 380

5189-2.ST25.txt

Glu Ser Phe Leu Glu Arg Pro Gln Ser Val Cys Leu Ala Asn Ala Pro
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 Glu Arg Gly Glu Gln Cys Asp Cys Gly Pro Pro Glu Asp Cys Arg Asn
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 Arg Cys Cys Asn Ser Thr Thr Cys Gln Leu Ala Glu Gly Ala Gln Cys
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 Ala His Gly Thr Cys Cys Gln Glu Cys Lys Val Lys Pro Ala Gly Glu
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 Leu Cys Arg Pro Lys Lys Asp Met Cys Asp Leu Glu Glu Phe Cys Asp
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 Gly Arg His Pro Glu Cys Pro Glu Asp Ala Phe Gln Glu Asn Gly Thr
 485 490 495
 Pro Cys Ser Gly Gly Tyr Cys Tyr Asn Gly Ala Cys Pro Thr Leu Ala
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 Gln Gln Cys Gln Ala Phe Trp Gly Pro Gly Gly Gln Ala Ala Glu Glu
 515 520 525
 Ser Cys Phe Ser Tyr Asp Ile Leu Pro Gly Cys Lys Ala Ser Arg Tyr
 530 535 540
 Arg Ala Asp Met Cys Gly Val Leu Gln Cys Lys Gly Gly Gln Gln Pro
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 565 570 575
 Glu Asp Gly Thr Ala Tyr Glu Pro Val Pro Glu Gly Thr Arg Cys Gly
 580 585 590
 Pro Glu Lys Val Cys Trp Lys Gly Arg Cys Gln Asp Leu His Val Tyr
 595 600 605
 Arg Ser Ser Asn Cys Ser Ala Gln Cys His Asn His Gly Val Cys Asn
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 His Lys Gln Glu Cys His Cys His Ala Gly Trp Ala Pro Pro His Cys
 625 630 635 640

5189-2.ST25.txt

Ala Lys Leu Leu Thr Glu Val His Ala Ala Ser Gly Ser Leu Pro Val
645 650 655

Leu Val Val Val Val Leu Val Leu Leu Ala Val Val Leu Val Thr Leu
660 665 670

Ala Gly Ile Ile Val Tyr Arg Lys Ala Arg Ser Arg Ile Leu Ser Arg
675 680 685

Asn Val Ala Pro Lys Thr Thr Met Gly Arg Ser Asn Pro Leu Phe His
690 695 700

Gln Ala Ala Ser Arg Val Pro Ala Lys Gly Gly Ala Pro Ala Pro Ser
705 710 715 720

Arg Gly Pro Gln Glu Leu Val Pro Thr Thr His Pro Gly Gln Pro Ala
725 730 735

Arg His Pro Ala Ser Ser Val Ala Leu Lys Arg Pro Pro Pro Ala Pro
740 745 750

Pro Val Thr Val Ser Ser Pro Pro Phe Pro Val Pro Val Tyr Thr Arg
755 760 765

Gln Ala Pro Lys Gln Val Ile Lys Pro Thr Phe Ala Pro Pro Val Pro
770 775 780

Pro Val Lys Pro Gly Ala Gly Ala Ala Asn Pro Gly Pro Ala Glu Gly
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5189-2.ST25.txt

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Ala	Val	Gly	Asp	Ala	Ala	Ala	Asp	Val	Glu	Val	Val	Leu	Pro	Trp	Arg	
			30					35					40			
gtg	cgc	ccc	gac	gac	gtg	cac	ctg	ccg	ccg	ctg	ccc	gca	gcc	ccc	ggg	197
Val	Arg	Pro	Asp	Asp	Val	His	Leu	Pro	Pro	Leu	Pro	Ala	Ala	Pro	Gly	
		45					50					55				
ccc	cga	cgg	cgg	cga	cgc	ccc	cgc	acg	ccc	cca	gcc	gcc	ccg	cgc	gcc	245
Pro	Arg	Arg	Arg	Arg	Arg	Pro	Arg	Thr	Pro	Pro	Ala	Ala	Pro	Arg	Ala	
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cgg	ccc	gga	gag	cgc	gcc	ctg	ctg	ctg	cac	ctg	ccg	gcc	ttc	ggg	cgc	293
Arg	Pro	Gly	Glu	Arg	Ala	Leu	Leu	Leu	His	Leu	Pro	Ala	Phe	Gly	Arg	
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gac	ctg	tac	ctt	cag	ctg	cgc	cgc	gac	ctg	cgc	ttc	ctg	tcc	cga	ggc	341
Asp	Leu	Tyr	Leu	Gln	Leu	Arg	Arg	Asp	Leu	Arg	Phe	Leu	Ser	Arg	Gly	
				95					100					105		
ttc	gag	gtg	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	gag	389
Phe	Glu	Val	Glu	Glu	Glu	Ala	Gly	Ala	Ala	Arg	Arg	Arg	Gly	Arg	Pro	
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gag	ctg	tgc	ttc	tac	tcg	ggc	cgt	gtg	ctc	ggc	cac	ccc	ggc	tcc	ctc	437
Glu	Leu	Cys	Phe	Tyr	Ser	Gly	Arg	Val	Leu	Gly	His	Pro	Gly	Ser	Leu	
		125					130					135				
gtc	tcg	ctc	agc	gcc	tgc	ggc	gcc	gcc	ggc	ggc	ctg	gtt	ggc	ctc	att	485
Val	Ser	Leu	Ser	Ala	Cys	Gly	Ala	Ala	Gly	Gly	Leu	Val	Gly	Leu	Ile	
	140					145					150					
cag	ctt	ggg	cag	gag	cag	gtg	cta	atc	cag	ccc	ctc	aac	aac	tcc	cag	533
Gln	Leu	Gly	Gln	Glu	Gln	Val	Leu	Ile	Gln	Pro	Leu	Asn	Asn	Ser	Gln	
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ggc	cca	ttc	agt	gga	cga	gaa	cat	ctg	atc	agg	cgc	aaa	tgg	tcc	ttg	581
Gly	Pro	Phe	Ser	Gly	Arg	Glu	His	Leu	Ile	Arg	Arg	Lys	Trp	Ser	Leu	
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acc	ccc	agc	cct	tct	gct	gag	gcc	cag	aga	cct	gag	cag	ctc	tgc	aag	629
Thr	Pro	Ser	Pro	Ser	Ala	Glu	Ala	Gln	Arg	Pro	Glu	Gln	Leu	Cys	Lys	
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gtt	cta	aca	gaa	aag	aag	aag	ccg	acg	tgg	ggc	agg	cct	tcg	cgg	gac	677
Val	Leu	Thr	Glu	Lys	Lys	Lys	Pro	Thr	Trp	Gly	Arg	Pro	Ser	Arg	Asp	
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tgg	cgg	gag	cgg	agg	aac	gct	atc	cgg	ctc	acc	agc	gag	cac	acg	gtg	725
Trp	Arg	Glu	Arg	Arg	Asn	Ala	Ile	Arg	Leu	Thr	Ser	Glu	His	Thr	Val	
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gag	acc	ctg	gtg	gtg	gcc	gac	gcc	gac	atg	gtg	cag	tac	cac	ggg	gcc	773
Glu	Thr	Leu	Val	Val	Ala	Asp	Ala	Asp	Met	Val	Gln	Tyr	His	Gly	Ala	
	235				240				245						250	
gag	gcc	gcc	cag	agg	ttc	atc	ctg	acc	gtc	atg	aac	atg	gta	tac	aat	821
Glu	Ala	Ala	Gln	Arg	Phe	Ile	Leu	Thr	Val	Met	Asn	Met	Val	Tyr	Asn	
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5189-2.ST25.txt

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Lys	Leu	Val	Leu	Leu	Arg	Gln	Arg	Pro	Ala	Lys	Leu	Ser	Ile	Gly	His		
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cat	ggt	gag	cgg	tcc	ctg	gag	agc	ttc	tgt	cac	tgg	cag	aac	gag	gag	965	
His	Gly	Glu	Arg	Ser	Leu	Glu	Ser	Phe	Cys	His	Trp	Gln	Asn	Glu	Glu		
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tat	gga	gga	gcg	cga	tac	ctc	ggc	aat	aac	cag	gtt	ccc	ggc	ggg	aag	1013	
Tyr	Gly	Gly	Ala	Arg	Tyr	Leu	Gly	Asn	Asn	Gln	Val	Pro	Gly	Gly	Lys		
	315				320					325					330		
gac	gac	ccg	ccc	ctg	gtg	gat	gct	gct	gtg	ttt	gtg	acc	agg	aca	gat	1061	
Asp	Asp	Pro	Pro	Leu	Val	Asp	Ala	Ala	Val	Phe	Val	Thr	Arg	Thr	Asp		
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Phe	Cys	Val	His	Lys	Asp	Glu	Pro	Cys	Asp	Thr	Val	Gly	Ile	Ala	Tyr		
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Leu	Gly	Gly	Val	Cys	Ser	Ala	Lys	Arg	Lys	Cys	Val	Leu	Ala	Glu	Asp		
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Leu	Gly	Met	Asn	His	Asp	Asp	Asp	His	Ser	Ser	Cys	Ala	Gly	Arg	Ser		
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Ser	Trp	Ser	Ser	Cys	Ser	Arg	Asp	Asp	Leu	Glu	Asn	Phe	Leu	Lys	Ser		
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Lys	Val	Ser	Thr	Cys	Leu	Leu	Val	Thr	Asp	Pro	Arg	Ser	Gln	His	Thr		
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gta	cgc	ctc	ccg	cac	aag	ctg	ccg	ggc	atg	cac	tac	agt	gcc	aac	gag	1445	
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Gln	Cys	Gln	Ile	Leu	Phe	Gly	Met	Asn	Ala	Thr	Phe	Cys	Arg	Asn	Met		
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Ser	Cys	Lys	Thr	Lys	Leu	Asp	Pro	Pro	Leu	Asp	Gly	Thr	Glu	Cys	Gly		
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5189-2.ST25.txt

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Pro	Glu	His	Val	Asp	Gly	Asp	Trp	Ser	Pro	Trp	Gly	Ala	Trp	Ser	Met	
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Cys	Ser	Arg	Thr	Cys	Gly	Thr	Gly	Ala	Arg	Phe	Arg	Gln	Arg	Lys	Cys	
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Val	Glu	His	Ala	Val	Cys	Glu	Asn	Leu	Pro	Cys	Pro	Lys	Gly	Leu	Pro	
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Ser	Phe	Arg	Asp	Gln	Gln	Cys	Gln	Ala	His	Asp	Arg	Leu	Ser	Pro	Lys	
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Lys	Lys	Gly	Leu	Leu	Thr	Ala	Val	Val	Val	Asp	Asp	Lys	Pro	Cys	Glu	
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ctc	tac	tgc	tcg	ccc	ctc	ggg	aag	gag	tcc	cca	ctg	ctg	gtg	gcc	gac	1973
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635					640					645					650	
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Ala	Ala	Lys	Glu	Asp	Arg	Cys	Gly	Val	Cys	Ser	Gly	Asp	Gly	Lys	Thr	
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Cys	His	Leu	Val	Lys	Gly	Asp	Phe	Ser	His	Ala	Arg	Gly	Thr	Ala	Leu	
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Lys	Asp	Ser	Gly	Lys	Gly	Ser	Ile	Asn	Ser	Asp	Trp	Lys	Ile	Glu	Leu	
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Pro	Gly	Glu	Phe	Gln	Ile	Ala	Gly	Thr	Thr	Val	Arg	Tyr	Val	Arg	Arg	
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5189-2.ST25.txt

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cac His 860	ccc Pro	tgc Cys	cag Gln	tca Ser	cgg Arg	tgg Trp 865	gtg Val	gca Ala	ggc Gly	ccg Pro	tgg Trp 870	agc Ser	ccc Pro	tgc Cys	tcg Ser	2645
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tcc Ser	atc Ile	tgg Trp 925	gag Glu	gcg Ala	tct Ser	gag Glu	tgg Trp 930	tca Ser	cag Gln	tgc Cys	tct Ser	gcc Ala 935	agc Ser	tgt Cys	ggc Gly	2837
aaa Lys	ggg Gly 940	gtg Val	tgg Trp	aaa Lys	cgg Arg	acc Thr 945	gtg Val	gcg Ala	tgc Cys	acc Thr	aac Asn 950	tca Ser	caa Gln	ggg Gly	aaa Lys	2885
tgc Cys 955	gac Asp	gca Ala	tcc Ser	acg Thr	agg Arg 960	ccg Pro	aga Arg	gcc Ala	gag Glu	gag Glu 965	gcc Ala	tgc Cys	gag Glu	gac Asp	tac Tyr 970	2933
tca Ser	ggc Gly	tgc Cys	tac Tyr	gag Glu 975	tgg Trp	aaa Lys	act Thr	ggg Gly	gac Asp 980	tgg Trp	tct Ser	acg Thr	tgc Cys	tcg Ser 985	tcg Ser	2981
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gtc Val	aca Thr	ggg Gly 1005	cgc Arg	cac His	ggc Gly	agc Ser	gag Glu 1010	tgc Cys	ccc Pro	gcc Ala	ctc Leu	tcg Ser 1015	aag Lys	cct Pro		3074
gcc Ala	ccc Pro	tac Tyr 1020	aga Arg	cag Gln	tgc Cys	tac Tyr	cag Gln 1025	gag Glu	gtc Val	tgc Cys	aac Asn	gac Asp 1030	agg Arg	atc Ile		3119
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5189-2.ST25.txt

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 aaa tgc aca cga gac cag tgg acg gta tat tgc cgg gtc atc cga 3209
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 Glu Lys Asn Leu Cys Gln Asp Met Arg Trp Tyr Gln Arg Cys Cys
 1065 1070 1075
 cag acc tgc agg gac ttc tat gca aac aag atg cgc cag cca ccg 3299
 Gln Thr Cys Arg Asp Phe Tyr Ala Asn Lys Met Arg Gln Pro Pro
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 ccg agc tcg tga cacgcagtc caagggtcgc tcaaagctca gactcaggtc 3351
 Pro Ser Ser
 1095
 tgaaaccac ccaccgcaa gcctaccagc cttgtggcca cgccccacc cggctgccac 3411
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 35 40 45
 His Leu Pro Pro Leu Pro Ala Ala Pro Gly Pro Arg Arg Arg Arg Arg
 50 55 60
 Pro Arg Thr Pro Pro Ala Ala Pro Arg Ala Arg Pro Gly Glu Arg Ala
 65 70 75 80
 Leu Leu Leu His Leu Pro Ala Phe Gly Arg Asp Leu Tyr Leu Gln Leu
 85 90 95
 Arg Arg Asp Leu Arg Phe Leu Ser Arg Gly Phe Glu Val Glu Glu Ala
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 Gly Ala Ala Arg Arg Arg Gly Arg Pro Ala Glu Leu Cys Phe Tyr Ser
 115 120 125
 Gly Arg Val Leu Gly His Pro Gly Ser Leu Val Ser Leu Ser Ala Cys

5189-2.ST25.txt

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 Val Leu Ile Gln Pro Leu Asn Asn Ser Gln Gly Pro Phe Ser Gly Arg
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 Glu His Leu Ile Arg Arg Lys Trp Ser Leu Thr Pro Ser Pro Ser Ala
 180 185 190
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 Lys Pro Thr Trp Gly Arg Pro Ser Arg Asp Trp Arg Glu Arg Arg Asn
 210 215 220
 Ala Ile Arg Leu Thr Ser Glu His Thr Val Glu Thr Leu Val Val Ala
 225 230 235 240
 Asp Ala Asp Met Val Gln Tyr His Gly Ala Glu Ala Ala Gln Arg Phe
 245 250 255
 Ile Leu Thr Val Met Asn Met Val Tyr Asn Met Phe Gln His Gln Ser
 260 265 270
 Leu Gly Ile Lys Ile Asn Ile Gln Val Thr Lys Leu Val Leu Leu Arg
 275 280 285
 Gln Arg Pro Ala Lys Leu Ser Ile Gly His His Gly Glu Arg Ser Leu
 290 295 300
 Glu Ser Phe Cys His Trp Gln Asn Glu Glu Tyr Gly Gly Ala Arg Tyr
 305 310 315 320
 Leu Gly Asn Asn Gln Val Pro Gly Gly Lys Asp Asp Pro Pro Leu Val
 325 330 335
 Asp Ala Ala Val Phe Val Thr Arg Thr Asp Phe Cys Val His Lys Asp
 340 345 350
 Glu Pro Cys Asp Thr Val Gly Ile Ala Tyr Leu Gly Gly Val Cys Ser
 355 360 365
 Ala Lys Arg Lys Cys Val Leu Ala Glu Asp Asn Gly Leu Asn Leu Ala
 370 375 380
 Phe Thr Ile Ala His Glu Leu Gly His Asn Leu Gly Met Asn His Asp

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Asp	Asp	His	Ser	Ser 405	Cys	Ala	Gly	Arg	Ser 410	His	Ile	Met	Ser	Gly 415	Glu			
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Arg	Asp	Asp 435	Leu	Glu	Asn	Phe	Leu 440	Lys	Ser	Lys	Val	Ser 445	Thr	Cys	Leu			
Leu	Val 450	Thr	Asp	Pro	Arg	Ser 455	Gln	His	Thr	Val	Arg 460	Leu	Pro	His	Lys			
Leu 465	Pro	Gly	Met	His	Tyr 470	Ser	Ala	Asn	Glu	Gln 475	Cys	Gln	Ile	Leu	Phe 480			
Gly	Met	Asn	Ala	Thr 485	Phe	Cys	Arg	Asn	Met 490	Glu	His	Leu	Met	Cys 495	Ala			
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Ala	Gly 530	Glu	Cys	Val	Ser	Lys 535	Thr	Pro	Ile	Pro	Glu 540	His	Val	Asp	Gly			
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Glu	Asn	Leu 595	Pro	Cys	Pro	Lys	Gly 600	Leu	Pro	Ser	Phe	Arg 605	Asp	Gln	Gln			
Cys	Gln 610	Ala	His	Asp	Arg	Leu 615	Ser	Pro	Lys	Lys	Lys 620	Gly	Leu	Leu	Thr			
Ala 625	Val	Val	Val	Asp	Asp 630	Lys	Pro	Cys	Glu	Leu 635	Tyr	Cys	Ser	Pro	Leu 640			
Gly	Lys	Glu	Ser	Pro	Leu	Leu	Val	Ala	Asp	Arg	Val	Leu	Asp	Gly	Thr			

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Lys Ile Gly Cys Asp Gly Ile Ile Gly Ser Ala Ala Lys Glu Asp Arg	675	680
Cys Gly Val Cys Ser Gly Asp Gly Lys Thr Cys His Leu Val Lys Gly	690	695
Asp Phe Ser His Ala Arg Gly Thr Ala Leu Lys Asp Ser Gly Lys Gly	705	710
Ser Ile Asn Ser Asp Trp Lys Ile Glu Leu Pro Gly Glu Phe Gln Ile	725	730
Ala Gly Thr Thr Val Arg Tyr Val Arg Arg Gly Leu Trp Glu Lys Ile	740	745
Ser Ala Lys Gly Pro Thr Lys Leu Pro Leu His Leu Met Val Leu Leu	755	760
Phe His Asp Gln Asp Tyr Gly Ile His Tyr Glu Tyr Thr Val Pro Val	770	775
Asn Arg Thr Ala Glu Asn Gln Ser Glu Pro Glu Lys Pro Gln Asp Ser	785	790
Leu Phe Ile Trp Thr His Ser Gly Trp Glu Gly Cys Ser Val Gln Cys	805	810
Gly Gly Gly Glu Arg Arg Thr Ile Val Ser Cys Thr Arg Ile Val Asn	820	825
Lys Thr Thr Thr Leu Val Asn Asp Ser Asp Cys Pro Gln Ala Ser Arg	835	840
Pro Glu Pro Gln Val Arg Arg Cys Asn Leu His Pro Cys Gln Ser Arg	850	855
Trp Val Ala Gly Pro Trp Ser Pro Cys Ser Ala Thr Cys Glu Lys Gly	865	870
Phe Gln His Arg Glu Val Thr Cys Val Tyr Gln Leu Gln Asn Gly Thr	885	890
His Val Ala Thr Arg Pro Leu Tyr Cys Pro Gly Pro Arg Pro Ala Ala		

900

905

910

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Glu Trp Ser Gln Cys Ser Ala Ser Cys Gly Lys Gly Val Trp Lys Arg
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Thr Val Ala Cys Thr Asn Ser Gln Gly Lys Cys Asp Ala Ser Thr Arg
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Pro Arg Ala Glu Glu Ala Cys Glu Asp Tyr Ser Gly Cys Tyr Glu Trp
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Lys Thr Gly Asp Trp Ser Thr Cys Ser Ser Thr Cys Gly Lys Gly Leu
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Gln Ser Arg Val Val Gln Cys Met His Lys Val Thr Gly Arg His Gly
 995 1000 1005

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Ser Pro Arg Leu Ala Ala Leu Thr Tyr Lys Cys Thr Arg Asp Gln
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Trp Thr Val Tyr Cys Arg Val Ile Arg Glu Lys Asn Leu Cys Gln
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5189-2.ST25.txt

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Asn Ser Gly Ser Cys Leu Cys Leu Pro Arg Phe Met Arg Leu Thr Phe	
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Val Pro Glu Ser Leu Glu Asn Leu Tyr Gln Thr Tyr Phe Lys Arg Gln	
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Arg His Glu Thr Leu Leu Val Leu Val Val Phe Ala Ala Leu Phe Asp	
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Cys Tyr Val Val Val Met Cys Ala Val Val Phe Ser Ser Asp Lys Leu	
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Ala Pro Leu Ala Val Ala Gly Ile Gly Leu Val Leu Asp Ile Ile Leu	
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Phe Val Leu Cys Lys Lys Gly Leu Leu Pro Asp Arg Val Thr Arg Arg	
125 130 135	
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Val Leu Pro Tyr Val Leu Trp Leu Leu Ile Thr Ala Gln Ile Phe Ser	
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Thr Leu Val Leu Gly Val Thr Val Ala Gln Gln Gln Gln Glu Glu Leu	
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Lys Gly Met Gln Leu Leu Arg Glu Ile Leu Ala Asn Val Phe Leu Tyr	
220 225 230	
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Leu Cys Ala Ile Ala Val Gly Ile Met Ser Tyr Tyr Met Ala Asp Arg	

5189-2.ST25.txt

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atg Met	aac Asn	ctg Leu	gaa Glu
gag Glu 270	cag Gln	agc Ser	cag Gln
cag Gln 275	cag Gln	gag Glu	aac Asn
ctc Leu	atg Met	ctt Leu 280	tcc Ser
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atc Ile	ctg Leu	ccc Pro	aag Lys 285
cac His	gtg Val	gct Ala	gac Asp
gag Glu 290	atg Met	ctg Leu	aaa Lys
gac Met 295	atg Met	aag Lys	aaa Lys
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gac Asp	gag Glu	agc Ser 300	cag Gln
aag Lys	gac Asp	cag Gln	cag Gln 305
ttc Phe	aac Asn	acc Thr	atg Met 310
tac Tyr	atg Met	tac Tyr	
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cgt Arg	cac His 315	gag Glu	aac Asn
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ttt Phe	gcc Ala	gac Asp	atc Ile 325
gtg Val	ggc Gly	ttt Phe	acc Thr
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cgc Arg 350	ttt Phe	gac Asp	aag Lys
ctg Leu	gca Ala 355	gct Ala	aaa Lys
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ctg Leu	ggc Gly	gac Asp	tgc Cys
tac Tyr 370	tac Tyr	tgc Cys	atc Ile
tgc Cys	ggc Gly 375	ttg Leu	cct Pro
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gac Asp	tac Tyr	cgg Arg 380	gag Glu
gac Asp	cac His	gcc Ala	gtc Val 385
tgc Cys	tcc Ser	atc Ile	ctc Leu
atg Met 390	ggg Gly	ctg Leu	gcc Ala
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atc Ile	tcg Tyr 400	gtg Val	cgg Arg
cgg Arg	gag Glu	aag Lys	acc Thr 405
aag Lys	act Thr	ggg Gly	gtg Val
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gcc Ala	aac Asn	aag Lys 445	atg Met
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atc Ile 450	cct Pro	ggg Gly	cgc Arg
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cag Gln	agc Ser	acc Thr 460	atg Met
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tac Tyr	cca Pro	gag Glu	gtg Val
aag Lys	cca Pro	gag Glu	gtg Val
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cag Gln			
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5189-2.ST25.txt

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Lys	Ser	Ser	Ser	Pro	Ala	Leu	Ile	Glu	Thr	Lys	Glu	Pro	Asn	Gly	Ser	
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Gln	Ala	Asp	Asn	Pro	Ser	Phe	Pro	Asn	Pro	Arg	Arg	Arg	Leu	Arg	Leu	
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Gln	Asp	Leu	Ala	Asp	Arg	Val	Val	Asp	Ala	Ser	Glu	Asp	Glu	His	Glu	
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Leu	Asn	Gln	Leu	Leu	Asn	Glu	Ala	Leu	Leu	Glu	Arg	Glu	Ser	Ala	Gln	
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gta	gta	aag	aag	aga	aac	acc	ttc	ctc	ttg	tcc	atg	cgg	ttc	atg	gac	1998
Val	Val	Lys	Lys	Arg	Asn	Thr	Phe	Leu	Leu	Ser	Met	Arg	Phe	Met	Asp	
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Pro	Glu	Met	Glu	Thr	Arg	Tyr	Ser	Val	Glu	Lys	Glu	Lys	Gln	Ser	Gly	
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Ile	Phe	Pro	Arg	Ala	Phe	Pro	Lys	Lys	Leu	Val	Ala	Phe	Ser	Thr	Trp	
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Ile	Asp	Arg	Thr	Arg	Trp	Ala	Arg	Asn	Thr	Trp	Ala	Met	Leu	Ala	Ile	
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ttc	atc	ctg	gtg	atg	gca	aat	gtc	gtg	gac	atg	ctc	agc	tgt	ctc	cag	2334
Phe	Ile	Leu	Val	Met	Ala	Asn	Val	Val	Asp	Met	Leu	Ser	Cys	Leu	Gln	
	715					720				725						
tac	tac	acg	gga	ccc	agc	aat	gca	acg	gca	ggg	atg	gag	acg	gag	ggc	2382
Tyr	Tyr	Thr	Gly	Pro	Ser	Asn	Ala	Thr	Ala	Gly	Met	Glu	Thr	Glu	Gly	
730					735					740					745	
agc	tgc	ctg	gag	aac	ccc	aag	tat	tac	aac	tat	gtg	gcc	gtg	ctg	tcc	2430
Ser	Cys	Leu	Glu	Asn	Pro	Lys	Tyr	Tyr	Asn	Tyr	Val	Ala	Val	Leu	Ser	

760

Page 25

5189-2.ST25.txt

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ggc ggg gtt ctg Gly Gly Val Leu 1050	gct ggg gtc atc gga Ala Gly Val Ile Gly 1055	gcc cgg aaa cca cac Ala Arg Lys Pro His 1060	3330
gac atc tgg ggc Asp Ile Trp Gly 1065	aat aca gtc aat gta Asn Thr Val Asn Val 1070	gcc agc agg atg gag Ala Ser Arg Met Glu 1075	3375
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cgg gat aag cta Arg Asp Lys Leu 1125	gcc acc ttc ccc aat Ala Thr Phe Pro Asn 1130	ggc ccc tct gtc aca Gly Pro Ser Val Thr 1135	3555
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5189-2.ST25.txt

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Gly Arg Thr His Glu Ile Ser Val Arg Asn Ser Gly Ser Cys Leu Cys
 35 40 45

Leu Pro Arg Phe Met Arg Leu Thr Phe Val Pro Glu Ser Leu Glu Asn
 50 55 60

Leu Tyr Gln Thr Tyr Phe Lys Arg Gln Arg His Glu Thr Leu Leu Val
 65 70 75 80

Leu Val Val Phe Ala Ala Leu Phe Asp Cys Tyr Val Val Val Met Cys
 85 90 95

Ala Val Val Phe Ser Ser Asp Lys Leu Ala Pro Leu Ala Val Ala Gly
 100 105 110

Ile Gly Leu Val Leu Asp Ile Ile Leu Phe Val Leu Cys Lys Lys Gly
 115 120 125

Leu Leu Pro Asp Arg Val Thr Arg Arg Val Leu Pro Tyr Val Leu Trp
 130 135 140

Leu Leu Ile Thr Ala Gln Ile Phe Ser Tyr Leu Gly Leu Asn Phe Ala
 145 150 155 160

Arg Ala His Ala Ala Ser Asp Thr Val Gly Trp Gln Val Phe Phe Val
 165 170 175

Phe Ser Phe Phe Ile Thr Leu Pro Leu Ser Leu Ser Pro Ile Val Ile
 180 185 190

Ile Ser Val Val Ser Cys Val Val His Thr Leu Val Leu Gly Val Thr
 195 200 205

Val Ala Gln Gln Gln Gln Glu Glu Leu Lys Gly Met Gln Leu Leu Arg
 210 215 220

Glu Ile Leu Ala Asn Val Phe Leu Tyr Leu Cys Ala Ile Ala Val Gly

225						230						235						240
Ile	Met	Ser	Tyr	Tyr 245	Met	Ala	Asp	Arg	Lys 250	His	Arg	Lys	Ala	Phe 255	Leu			
Glu	Ala	Arg	Gln 260	Ser	Leu	Glu	Val	Lys 265	Met	Asn	Leu	Glu	Glu 270	Gln	Ser			
Gln	Gln	Gln 275	Glu	Asn	Leu	Met	Leu 280	Ser	Ile	Leu	Pro	Lys 285	His	Val	Ala			
Asp	Glu 290	Met	Leu	Lys	Asp	Met 295	Lys	Lys	Asp	Glu	Ser 300	Gln	Lys	Asp	Gln			
Gln 305	Gln	Phe	Asn	Thr	Met 310	Tyr	Met	Tyr	Arg	His 315	Glu	Asn	Val	Ser	Ile 320			
Leu	Phe	Ala	Asp	Ile 325	Val	Gly	Phe	Thr	Gln 330	Leu	Ser	Ser	Ala	Cys 335	Ser			
Ala	Gln	Glu	Leu 340	Val	Lys	Leu	Leu	Asn 345	Glu	Leu	Phe	Ala	Arg 350	Phe	Asp			
Lys	Leu	Ala 355	Ala	Lys	Tyr	His	Gln 360	Leu	Arg	Ile	Lys	Ile 365	Leu	Gly	Asp			
Cys	Tyr 370	Tyr	Cys	Ile	Cys	Gly 375	Leu	Pro	Asp	Tyr	Arg 380	Glu	Asp	His	Ala			
Val 385	Cys	Ser	Ile	Leu	Met 390	Gly	Leu	Ala	Met	Val 395	Glu	Ala	Ile	Ser	Tyr 400			
Val	Arg	Glu	Lys	Thr 405	Lys	Thr	Gly	Val	Asp 410	Met	Arg	Val	Gly	Val 415	His			
Thr	Gly	Thr	Val 420	Leu	Gly	Gly	Val	Leu 425	Gly	Gln	Lys	Arg	Trp 430	Gln	Tyr			
Asp	Val	Trp 435	Ser	Thr	Asp	Val	Thr 440	Val	Ala	Asn	Lys	Met 445	Glu	Ala	Gly			
Gly	Ile 450	Pro	Gly	Arg	Val	His 455	Ile	Ser	Gln	Ser	Thr 460	Met	Asp	Cys	Leu			
Lys 465	Gly	Glu	Phe	Asp	Val 470	Glu	Pro	Gly	Asp	Gly 475	Gly	Ser	Arg	Cys	Asp 480			
Tyr	Leu	Glu	Glu	Lys	Gly	Ile	Glu	Thr	Tyr	Leu	Ile	Ile	Ala	Ser	Lys			

5189-2.ST25.txt

485

490

495

Pro Glu Val Lys Lys Thr Ala Thr Gln Asn Gly Leu Asn Gly Ser Ala
 500 505 510
 Leu Pro Asn Gly Ala Pro Ala Ser Ser Lys Ser Ser Ser Pro Ala Leu
 515 520 525
 Ile Glu Thr Lys Glu Pro Asn Gly Ser Ala His Ser Ser Gly Ser Thr
 530 535 540
 Ser Glu Lys Pro Glu Glu Gln Asp Ala Gln Ala Asp Asn Pro Ser Phe
 545 550 555 560
 Pro Asn Pro Arg Arg Arg Leu Arg Leu Gln Asp Leu Ala Asp Arg Val
 565 570 575
 Val Asp Ala Ser Glu Asp Glu His Glu Leu Asn Gln Leu Leu Asn Glu
 580 585 590
 Ala Leu Leu Glu Arg Glu Ser Ala Gln Val Val Lys Lys Arg Asn Thr
 595 600 605
 Phe Leu Leu Ser Met Arg Phe Met Asp Pro Glu Met Glu Thr Arg Tyr
 610 615 620
 Ser Val Glu Lys Glu Lys Gln Ser Gly Ala Ala Phe Ser Cys Ser Cys
 625 630 635 640
 Val Val Leu Leu Cys Thr Ala Leu Val Glu Ile Leu Ile Asp Pro Trp
 645 650 655
 Leu Met Thr Asn Tyr Val Thr Phe Met Val Gly Glu Ile Leu Leu Leu
 660 665 670
 Ile Leu Thr Ile Cys Ser Leu Ala Ala Ile Phe Pro Arg Ala Phe Pro
 675 680 685
 Lys Lys Leu Val Ala Phe Ser Thr Trp Ile Asp Arg Thr Arg Trp Ala
 690 695 700
 Arg Asn Thr Trp Ala Met Leu Ala Ile Phe Ile Leu Val Met Ala Asn
 705 710 715 720
 Val Val Asp Met Leu Ser Cys Leu Gln Tyr Tyr Thr Gly Pro Ser Asn
 725 730 735
 Ala Thr Ala Gly Met Glu Thr Glu Gly Ser Cys Leu Glu Asn Pro Lys

740

745

750

Tyr Tyr Asn Tyr Val Ala Val Leu Ser Leu Ile Ala Thr Ile Met Leu
755 760 765

Val Gln Val Ser His Met Val Lys Leu Thr Leu Met Leu Leu Val Ala
770 775 780

Gly Ala Val Ala Thr Ile Asn Leu Tyr Ala Trp Arg Pro Val Phe Asp
785 790 795 800

Glu Tyr Asp His Lys Arg Phe Arg Glu His Asp Leu Pro Met Val Ala
805 810 815

Leu Glu Gln Met Gln Gly Phe Asn Pro Gly Leu Asn Gly Thr Asp Arg
820 825 830

Leu Pro Leu Val Pro Ser Lys Tyr Ser Met Thr Val Met Val Phe Leu
835 840 845

Met Met Leu Ser Phe Tyr Tyr Phe Ser Arg His Val Glu Lys Leu Ala
850 855 860

Arg Thr Leu Phe Leu Trp Lys Ile Glu Val His Asp Gln Lys Glu Arg
865 870 875 880

Val Tyr Glu Met Arg Arg Trp Asn Glu Ala Leu Val Thr Asn Met Leu
885 890 895

Pro Glu His Val Ala Arg His Phe Leu Gly Ser Lys Lys Arg Asp Glu
900 905 910

Glu Leu Tyr Ser Gln Thr Tyr Asp Glu Ile Gly Val Met Phe Ala Ser
915 920 925

Leu Pro Asn Phe Ala Asp Phe Tyr Thr Glu Glu Ser Ile Asn Asn Gly
930 935 940

Gly Ile Glu Cys Leu Arg Phe Leu Asn Glu Ile Ile Ser Asp Phe Asp
945 950 955 960

Ser Leu Leu Asp Asn Pro Lys Phe Arg Val Ile Thr Lys Ile Lys Thr
965 970 975

Ile Gly Ser Thr Tyr Met Ala Ala Ser Gly Val Thr Pro Asp Val Asn
980 985 990

Thr Asn Gly Phe Ala Ser Ser Asn Lys Glu Asp Lys Ser Glu Arg Glu

995

1000

1005

Arg Trp Gln His Leu Ala Asp Leu Ala Asp Phe Ala Leu Ala Met
1010 1015 1020

Lys Asp Thr Leu Thr Asn Ile Asn Asn Gln Ser Phe Asn Asn Phe
1025 1030 1035

Met Leu Arg Ile Gly Met Asn Lys Gly Gly Val Leu Ala Gly Val
1040 1045 1050

Ile Gly Ala Arg Lys Pro His Tyr Asp Ile Trp Gly Asn Thr Val
1055 1060 1065

Asn Val Ala Ser Arg Met Glu Ser Thr Gly Val Met Gly Asn Ile
1070 1075 1080

Gln Val Val Glu Glu Thr Gln Val Ile Leu Arg Glu Tyr Gly Phe
1085 1090 1095

Arg Phe Val Arg Arg Gly Pro Ile Phe Val Lys Gly Lys Gly Glu
1100 1105 1110

Leu Leu Thr Phe Phe Leu Lys Gly Arg Asp Lys Leu Ala Thr Phe
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Pro Asn Gly Pro Ser Val Thr Leu Pro His Gln Val Val Asp Asn
1130 1135 1140

Ser

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Met Ala Asp Leu Glu Ala Val Leu Ala
1 5
gac gtg agc tac ctg atg gcc atg gag aag agc aag gcc acg ccg gcc 160
Asp Val Ser Tyr Leu Met Ala Met Glu Lys Ser Lys Ala Thr Pro Ala
10 15 20 25

5189-2.ST25.txt

gcg cgc gcc agc aag aag ata ctg ctg ccc gag ccc agc atc cgc agt Ala Arg Ala Ser Lys Lys Ile Leu Leu Pro Glu Pro Ser Ile Arg Ser 30 35 40	208
gtc atg cag aag tac ctg gag gac cgg ggc gag gtg acc ttt gag aag Val Met Gln Lys Tyr Leu Glu Asp Arg Gly Glu Val Thr Phe Glu Lys 45 50 55	256
atc ttt tcc cag aag ctg ggg tac ctg ctc ttc cga gac ttc tgc ctg Ile Phe Ser Gln Lys Leu Gly Tyr 65 Leu Leu Phe Arg Phe Cys Leu 60 70	304
aac cac ctg gag gag gcc agg ccc ttg gtg gaa ttc tat gag gag atc Asn His Leu Glu Glu Ala Arg Pro Leu Val Glu Phe Tyr Glu Glu Ile 75 80 85	352
aag aag tac gag aag ctg gag acg gag gag gag cgt gtg gcc cgc agc Lys Lys Tyr Glu Lys Leu Glu Thr Glu Glu Glu Arg Val Ala Arg Ser 90 95 100 105	400
cgg gag atc ttc gac tca tac atc atg aag gag ctg ctg gcc tgc tcg Arg Glu Ile Phe Asp Ser Tyr Ile Met Lys Glu Leu Leu Ala Cys Ser 110 115 120	448
cat ccc ttc tcg aag agt gcc act gag cat gtc caa ggc cac ctg ggg His Pro Phe Ser Lys Ser Ala Thr Glu His Val Gln Gly His Leu Gly 125 130 135	496
aag aag cag gtg cct ccg gat ctc ttc cag cca tac atc gaa gag att Lys Lys Gln Val Pro Pro Asp Leu Phe Gln Pro Tyr Ile Glu Glu Ile 140 145 150	544
tgt caa aac ctc cga ggg gac gtg ttc cag aaa ttc att gag agc gat Cys Gln Asn Leu Arg Gly Asp Val Phe Gln Lys Phe Ile Glu Ser Asp 155 160 165	592
aag ttc aca cgg ttt tgc cag tgg aag aat gtg gag ctc aac atc cac Lys Phe Thr Arg Phe Cys Gln Trp Lys Asn Val Glu Leu Asn Ile His 170 175 180 185	640
ctg acc atg aat gac ttc agc gtg cat cgc atc att ggg cgc ggg ggc Leu Thr Met Asn Asp Phe Ser Val His Arg Ile Ile Gly Arg Gly Gly 190 195 200	688
ttt ggc gag gtc tat ggg tgc cgg aag cgt gac aca ggc aag atg tac Phe Gly Glu Val Tyr Gly Cys Arg Lys Arg Asp Thr Gly Lys Met Tyr 205 210 215	736
gcc atg aag tgc ctg gac aaa aag cgc atc aag atg aag cag ggg gag Ala Met Lys Cys Leu Asp Lys Lys Arg Ile Lys Met Lys Gln Gly Glu 220 225 230	784
acc ctg gcc ctg aac gag cgc atc atg ctc tcg ctc gtc agc act ggg Thr Leu Ala Leu Asn Glu Arg Ile Met Leu Ser Leu Val Ser Thr Gly 235 240 245	832
gac tgc cca ttc att gtc tgc atg tca tac gcg ttc cac acg cca gac Asp Cys Pro Phe Ile Val Cys Met Ser Tyr Ala Phe His Thr Pro Asp 250 255 260 265	880
aag ctc agc ttc atc ctg gac ctc atg aac ggt ggg gac ctg cac tac Lys Leu Ser Phe Ile Leu Asp Leu Met Asn Gly Gly Asp Leu His Tyr 270 275 280	928

5189-2.ST25.txt

cac ctc tcc cag cac ggg gtc ttc tca gag gct gac atg cgc ttc tat	976
His Leu Ser Gln His Gly Val Phe Ser Glu Ala Asp Met Arg Phe Tyr	
285	
gcg gcc gag atc atc ctg ggc ctg gag cac atg cac aac cgc ttc gtg	1024
Ala Ala Glu Ile Ile Leu Gly Leu Glu His Met His Asn Arg Phe Val	
300	
305	
310	
gtc tac cgg gac ctg aag cca gcc aac atc ctt ctg gac gag cat ggc	1072
Val Tyr Arg Asp Leu Lys Pro Ala Asn Ile Leu Leu Asp Glu His Gly	
315	
320	
325	
cac gtg cgg atc tcg gac ctg ggc ctg gcc tgt gac ttc tcc aag aag	1120
His Val Arg Ile Ser Asp Leu Gly Leu Ala Cys Asp Phe Ser Lys Lys	
330	
335	
340	
345	
aag ccc cat gcc agc gtg ggc acc cac ggg tac atg gct ccg gag gtc	1168
Lys Pro His Ala Ser Val Gly Thr His Gly Tyr Met Ala Pro Glu Val	
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355	
360	
ctg cag aag ggc gtg gcc tac gac agc agt gcc gac tgg ttc tct ctg	1216
Leu Gln Lys Gly Val Ala Tyr Asp Ser Ser Ala Asp Trp Phe Ser Leu	
365	
370	
375	
ggg tgc atg ctc ttc aag ttg ctg cgg ggg cac agc ccc ttc cgg cag	1264
Gly Cys Met Leu Phe Lys Leu Leu Arg Gly His Ser Pro Phe Arg Gln	
380	
385	
390	
cac aag acc aaa gac aag cat gag atc gac cgc atg acg ctg acg atg	1312
His Lys Thr Lys Asp Lys His Glu Ile Asp Arg Met Thr Leu Thr Met	
395	
400	
405	
gcc gtg gag ctg ccc gac tcc ttc tcc cct gaa cta cac tcc ctg ctg	1360
Ala Val Glu Leu Pro Asp Ser Phe Ser Pro Glu Leu His Ser Leu Leu	
410	
415	
420	
425	
gag ggg ttg ctg cag agg gat gtc aac cgg aga ttg ggc tgc ctg ggc	1408
Glu Gly Leu Leu Gln Arg Asp Val Asn Arg Arg Leu Gly Cys Leu Gly	
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440	
cga ggg gct cag gag gtg aaa gag agc ccc ttt ttc cgc tcc ctg gac	1456
Arg Gly Ala Gln Glu Val Lys Glu Ser Pro Phe Phe Arg Ser Leu Asp	
445	
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455	
tgg cag atg gtc ttc ttg cag agg tac cct ccc ccg ctg atc ccc cca	1504
Trp Gln Met Val Phe Leu Gln Arg Tyr Pro Pro Pro Leu Ile Pro Pro	
460	
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470	
cga ggg gag gtg aac gcg gcc gac gcc ttc gac att ggc tcc ttc gat	1552
Arg Gly Glu Val Asn Ala Ala Asp Ala Phe Asp Ile Gly Ser Phe Asp	
475	
480	
485	
gag gag gac aca aaa gga atc aag tta ctg gac agt gat cag gag ctc	1600
Glu Glu Asp Thr Lys Gly Ile Lys Leu Leu Asp Ser Asp Gln Glu Leu	
490	
495	
500	
505	
tac cgc aac ttc ccc ctc acc atc tcg gag cgg tgg cag cag gag gtg	1648
Tyr Arg Asn Phe Pro Leu Thr Ile Ser Glu Arg Trp Gln Gln Glu Val	
510	
515	
520	
gca gag act gtc ttc gac acc atc aac gct gag aca gac cgg ctg gag	1696
Ala Glu Thr Val Phe Asp Thr Ile Asn Ala Glu Thr Asp Arg Leu Glu	
525	
530	
535	

5189-2.ST25.txt

gct cgc aag aaa gcc aag aac aag cag ctg ggc cat gag gaa gac tac Ala Arg Lys Lys Ala Lys Asn Lys Gln Leu Gly His Glu Glu Asp Tyr 540 545 550	1744
gcc ctg ggc aag gac tgc atc atg cat ggc tac atg tcc aag atg ggc Ala Leu Gly Lys Asp Cys Ile Met His Gly Tyr Met Ser Lys Met Gly 555 560 565	1792
aac ccc ttt ctg acc cag tgg cag cgg cgg tac ttc tac ctg ttc ccc Asn Pro Phe Leu Thr Gln Trp Gln Arg Arg Tyr Phe Tyr Leu Phe Pro 570 575 580 585	1840
aac cgc ctc gag tgg cgg ggc gag ggc gag gcc ccg cag agc ctg ctg Asn Arg Leu Glu Trp Arg Gly Glu Gly Glu Ala Pro Gln Ser Leu Leu 590 595 600	1888
acc atg gag gag atc cag tcg gtg gag gag acg cag atc aag gag cgc Thr Met Glu Glu Ile Gln Ser Val Glu Glu Thr Gln Ile Lys Glu Arg 605 610 615	1936
aag tgc ctg ctc ctc aag atc cgc ggt ggg aaa cag ttc att ttg cag Lys Cys Leu Leu Lys Ile Arg Gly Gly Lys Gln Phe Ile Leu Gln 620 625 630	1984
tgc gat agc gac cct gag ctg gtg cag tgg aag aag gag ctg cgc gac Cys Asp Ser Asp Pro Glu Leu Val Gln Trp Lys Lys Glu Leu Arg Asp 635 640 645	2032
gcc tac cgc gag gcc cag cag ctg gtg cag cgg gtg ccc aag atg aag Ala Tyr Arg Glu Ala Gln Gln Leu Val Gln Arg Val Pro Lys Met Lys 650 655 660 665	2080
aac aag ccg cgc tcg ccc gtg gtg gag ctg agc aag gtg ccg ctg gtc Asn Lys Pro Arg Ser Pro Val Val Glu Leu Ser Lys Val Pro Leu Val 670 675 680	2128
cag cgc ggc agt gcc aac ggc ctc tga cccgcccacc cgccttttat Gln Arg Gly Ser Ala Asn Gly Leu 685	2175
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gctaccctcc ctgctgtccc ctcttgcccc aacccccagc acccgggctc agggaccaca	2835
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5189-2.ST25.txt

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gggctgggtg cgaccccatc tgcccaggac ggggccggcc aggtgggcgg gcagcacagc 2955
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<213> Homo sapiens

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<400> 10
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Met Glu Lys Ser Lys Ala Thr Pro Ala Ala Arg Ala Ser Lys Lys Ile
20          25          30

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```

Leu Leu Pro Glu Pro Ser Ile Arg Ser Val Met Gln Lys Tyr Leu Glu
35          40          45

```

```

Asp Arg Gly Glu Val Thr Phe Glu Lys Ile Phe Ser Gln Lys Leu Gly
50          55          60

```

```

Tyr Leu Leu Phe Arg Asp Phe Cys Leu Asn His Leu Glu Glu Ala Arg
65          70          75          80

```

```

Pro Leu Val Glu Phe Tyr Glu Glu Ile Lys Lys Tyr Glu Lys Leu Glu
85          90          95

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Thr Glu Glu Glu Arg Val Ala Arg Ser Arg Glu Ile Phe Asp Ser Tyr
100         105         110

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Ile Met Lys Glu Leu Leu Ala Cys Ser His Pro Phe Ser Lys Ser Ala
115         120         125

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5189-2.ST25.txt

Thr Glu His Val Gln Gly His Leu Gly Lys Lys Gln Val Pro Pro Asp
 130 135 140
 Leu Phe Gln Pro Tyr Ile Glu Glu Ile Cys Gln Asn Leu Arg Gly Asp
 145 150 155 160
 Val Phe Gln Lys Phe Ile Glu Ser Asp Lys Phe Thr Arg Phe Cys Gln
 165 170 175
 Trp Lys Asn Val Glu Leu Asn Ile His Leu Thr Met Asn Asp Phe Ser
 180 185 190
 Val His Arg Ile Ile Gly Arg Gly Gly Phe Gly Glu Val Tyr Gly Cys
 195 200 205
 Arg Lys Arg Asp Thr Gly Lys Met Tyr Ala Met Lys Cys Leu Asp Lys
 210 215 220
 Lys Arg Ile Lys Met Lys Gln Gly Glu Thr Leu Ala Leu Asn Glu Arg
 225 230 235 240
 Ile Met Leu Ser Leu Val Ser Thr Gly Asp Cys Pro Phe Ile Val Cys
 245 250 255
 Met Ser Tyr Ala Phe His Thr Pro Asp Lys Leu Ser Phe Ile Leu Asp
 260 265 270
 Leu Met Asn Gly Gly Asp Leu His Tyr His Leu Ser Gln His Gly Val
 275 280 285
 Phe Ser Glu Ala Asp Met Arg Phe Tyr Ala Ala Glu Ile Ile Leu Gly
 290 295 300
 Leu Glu His Met His Asn Arg Phe Val Val Tyr Arg Asp Leu Lys Pro
 305 310 315 320
 Ala Asn Ile Leu Leu Asp Glu His Gly His Val Arg Ile Ser Asp Leu
 325 330 335
 Gly Leu Ala Cys Asp Phe Ser Lys Lys Lys Pro His Ala Ser Val Gly
 340 345 350
 Thr His Gly Tyr Met Ala Pro Glu Val Leu Gln Lys Gly Val Ala Tyr
 355 360 365
 Asp Ser Ser Ala Asp Trp Phe Ser Leu Gly Cys Met Leu Phe Lys Leu
 370 375 380

5189-2.ST25.txt

Leu Arg Gly His Ser Pro Phe Arg Gln His Lys Thr Lys Asp Lys His
 385 390 395 400
 Glu Ile Asp Arg Met Thr Leu Thr Met Ala Val Glu Leu Pro Asp Ser
 405 410 415
 Phe Ser Pro Glu Leu His Ser Leu Leu Glu Gly Leu Leu Gln Arg Asp
 420 425 430
 Val Asn Arg Arg Leu Gly Cys Leu Gly Arg Gly Ala Gln Glu Val Lys
 435 440 445
 Glu Ser Pro Phe Phe Arg Ser Leu Asp Trp Gln Met Val Phe Leu Gln
 450 455 460
 Arg Tyr Pro Pro Pro Leu Ile Pro Pro Arg Gly Glu Val Asn Ala Ala
 465 470 475 480
 Asp Ala Phe Asp Ile Gly Ser Phe Asp Glu Glu Asp Thr Lys Gly Ile
 485 490 495
 Lys Leu Leu Asp Ser Asp Gln Glu Leu Tyr Arg Asn Phe Pro Leu Thr
 500 505 510
 Ile Ser Glu Arg Trp Gln Gln Glu Val Ala Glu Thr Val Phe Asp Thr
 515 520 525
 Ile Asn Ala Glu Thr Asp Arg Leu Glu Ala Arg Lys Lys Ala Lys Asn
 530 535 540
 Lys Gln Leu Gly His Glu Glu Asp Tyr Ala Leu Gly Lys Asp Cys Ile
 545 550 555 560
 Met His Gly Tyr Met Ser Lys Met Gly Asn Pro Phe Leu Thr Gln Trp
 565 570 575
 Gln Arg Arg Tyr Phe Tyr Leu Phe Pro Asn Arg Leu Glu Trp Arg Gly
 580 585 590
 Glu Gly Glu Ala Pro Gln Ser Leu Leu Thr Met Glu Glu Ile Gln Ser
 595 600 605
 Val Glu Glu Thr Gln Ile Lys Glu Arg Lys Cys Leu Leu Leu Lys Ile
 610 615 620
 Arg Gly Gly Lys Gln Phe Ile Leu Gln Cys Asp Ser Asp Pro Glu Leu
 625 630 635 640

5189-2.ST25.txt

Val Gln Trp Lys Lys Glu Leu Arg Asp Ala Tyr Arg Glu Ala Gln Gln
 645 650 655

Leu Val Gln Arg Val Pro Lys Met Lys Asn Lys Pro Arg Ser Pro Val
 660 665 670

Val Glu Leu Ser Lys Val Pro Leu Val Gln Arg Gly Ser Ala Asn Gly
 675 680 685

Leu

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 <222> (255)..(518)
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 cacagcggct cagctcctgg agagtgaggg ttgaagaaag cggagggcag ccgcctgcgc 180
 ccgctggctc ccattagggtc ggttcctgca gcggtgcccgc gcagccttgg tgaaggccct 240
 gcccggcaga gatc atg tat tgc ctc cag tgg ctg ctg ccc gtc ctc ctc 290
 Met Tyr Cys Leu Gln Trp Leu Leu Pro Val Leu Leu
 1 5 10
 atc ccc aag ccc ctc aac ccc gcc ctg tgg ttc agc cac tcc atg ttc 338
 Ile Pro Lys Pro Leu Asn Pro Ala Leu Trp Phe Ser His Ser Met Phe
 15 20 25
 atg ggc ttc tac ctg ctc agc ttc ctc ctg gaa cgg aag cct tgc aca 386
 Met Gly Phe Tyr Leu Leu Ser Phe Leu Leu Glu Arg Lys Pro Cys Thr
 30 35 40
 att tgt gcc ttg gtt ttc ctg gca gcc ctg ttc ctt atc tgc tat agc 434
 Ile Cys Ala Leu Val Phe Leu Ala Ala Leu Phe Leu Ile Cys Tyr Ser
 45 50 55 60
 tgc tgg gga aac tgt ttc ctg tac cac tgc tcc gat tcc ccg ctt cca 482
 Cys Trp Gly Asn Cys Phe Leu Tyr His Cys Ser Asp Ser Pro Leu Pro
 65 70 75
 gaa tcg gcg cat gat ccc ggc gtt gtg ggc acc taa cggcctgccc 528
 Glu Ser Ala His Asp Pro Gly Val Val Gly Thr
 80 85
 tgtagctttt ccaaggaagc agaagacggg aggggaggca ttgacatagg tcataaagca 588
 ttggagtttc aaatcccgcg gcctcgcggg tgtcacattc ctgacggcgc ctttttggcc 648
 tgtgatgttt tacccttaca atgtgaataa tggcactgac cgggtgctttt attgtaaagt 708

5189-2.ST25.txt

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cctatagtcg tgggtggtct tgtggttggtg tgtgttctgt ccccatctag gtcctggctg 768
gccgcatgac caccctcttc gcctcattac tgtgaggagt ctgggtccat cctggtcagc 828
tgccccaatg tgacctgggg cagataaaat gccagtctca ttgtcacctc tgtgacctc 888
ccttgctcagg gtctccttcc ttcccagaat gttactgact cctcagtccc tcttctgggt 948
tccctttatt tctcttctac ccttttcctt ttttggggag tacctgtcca agacagggct 1008
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atccttcttt ccttgttcag caggctagac agaaacatgt cttgactgtt agttgtccac 1128
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gaaagagaga tgggccaggc agagaacaga actggaggca gtccatctag ggaatgggac 1908
tgtgaggcca tacttgtgaa acgtctggac tgctattcta gagcttttat ttggtgtgtt 1968
cgttgcacag ctgtttgaaa tgtttaataa agctttataa actttaaaaa aaaaaaaaaa 2028
aaa 2031

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<210> 12
<211> 87
<212> PRT
<213> Homo sapiens

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<400> 12
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Met Tyr Cys Leu Gln Trp Leu Leu Pro Val Leu Leu Ile Pro Lys Pro
1          5          10          15
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```
Leu Asn Pro Ala Leu Trp Phe Ser His Ser Met Phe Met Gly Phe Tyr
          20          25          30
```

```
Leu Leu Ser Phe Leu Leu Glu Arg Lys Pro Cys Thr Ile Cys Ala Leu
          35          40          45
```

5189-2.ST25.txt

Val Phe Leu Ala Ala Leu Phe Leu Ile Cys Tyr Ser Cys Trp Gly Asn
50 55 60

Cys Phe Leu Tyr His Cys Ser Asp Ser Pro Leu Pro Glu Ser Ala His
65 70 75 80

Asp Pro Gly Val Val Gly Thr
85

<210> 13
<211> 3578
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (268)..(1389)
<223>

<400> 13
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ctgccgcgca tcgtccgcag acgccgccac cgccatgggc tcctgaggct agcttgctcac 120
tttctgcaaa gggtttccctc agggagcctc ctgctgccag gcacccatgac agtgagggggg 180
gatgtgctgg ccccgatcc agcgtcgccc acgaccgcag cagcctcgcc cagcgtctcc 240
gtgatccccg agggcagccc cactgcc atg gag cag cct gtg ttc ctg atg aca 294
Met Glu Gln Pro Val Phe Leu Met Thr
1 5
act gcc gct cag gcc atc tct ggc ttc ttc gtg tgg acg gcc ctg ctc 342
Thr Ala Ala Gln Ala Ile Ser Gly Phe Phe Val Trp Thr Ala Leu Leu
10 15 20 25
atc aca tgc cac cag atc tac atg cac ctg cgc tgc tac agc tgc ccc 390
Ile Thr Cys His Gln Ile Tyr Met His Leu Arg Cys Tyr Ser Cys Pro
30 35 40
aac gag cag cgc tac atc gtg cgc atc ctc ttc atc gtg ccc atc tac 438
Asn Glu Gln Arg Tyr Ile Val Arg Ile Leu Phe Ile Val Pro Ile Tyr
45 50 55
gcc ttt gac tcc tgg ctc agc ctc ctc ttc ttc acc aac gac cag tac 486
Ala Phe Asp Ser Trp Leu Ser Leu Leu Phe Phe Thr Asn Asp Gln Tyr
60 65 70
tac gtg tac ttc ggc acc gtc cgc gac tgc tat gag gcc ttg gtc atc 534
Tyr Val Tyr Phe Gly Thr Val Arg Asp Cys Tyr Glu Ala Leu Val Ile
75 80 85
tat aat ttc ctg agc ctg tgc tat gag tac cta gga gga gaa agt tcc 582
Tyr Asn Phe Leu Ser Leu Cys Tyr Glu Tyr Leu Gly Gly Glu Ser Ser
90 95 100 105
atc atg tcg gag atc aga gga aaa ccc att gag tcc agc tgt atg tat 630
Ile Met Ser Glu Ile Arg Gly Lys Pro Ile Glu Ser Ser Cys Met Tyr
110 115 120

5189-2.ST25.txt

ggc acc tgc tgc ctc tgg gga aag act tat tcc atc gga ttt ctg agg	678
Gly Thr Cys Cys Leu Trp Gly Lys Thr Tyr Ser Ile Gly Phe Leu Arg	
125	
ttc tgc aaa cag gcc acc ctg cag ttc tgt gtg gtg aag cca ctc atg	726
Phe Cys Lys Gln Ala Thr Leu Gln Phe Cys Val Val Lys Pro Leu Met	
140	
145	
150	
gcg gtc agc act gtg gtc ctc cag gcc ttc ggc aag tac cgg gat ggg	774
Ala Val Ser Thr Val Val Leu Gln Ala Phe Gly Lys Tyr Arg Asp Gly	
155	
160	
165	
gac ttt gac gtc acc agt ggc tac ctc tac gtg acc atc atc tac aac	822
Asp Phe Asp Val Thr Ser Gly Tyr Leu Tyr Val Thr Ile Ile Tyr Asn	
170	
175	
180	
185	
atc tcc gtc agc ctg gcc ctc tac gcc ctc ttc ctc ttc tac ttc gcc	870
Ile Ser Val Ser Leu Ala Leu Tyr Ala Leu Phe Leu Phe Tyr Phe Ala	
190	
195	
200	
acc cgg gag ctg ctc agc ccc tac agc ccc gtc ctc aag ttc ttc atg	918
Thr Arg Glu Leu Ser Pro Tyr Ser Pro Val Leu Lys Phe Phe Met	
205	
210	
215	
gtc aag tcc gtc atc ttt ctt tcc ttc tgg caa ggc atg ctc ctg gcc	966
Val Lys Ser Val Ile Phe Leu Ser Phe Trp Gln Gly Met Leu Leu Ala	
220	
225	
230	
atc ctg gag aag tgt ggg gcc atc ccc aaa atc cac tcg gcc cgc gtg	1014
Ile Leu Glu Lys Cys Gly Ala Ile Pro Lys Ile His Ser Ala Arg Val	
235	
240	
245	
tcg gtg ggc gag ggc acc gtg gct gcc ggc tac cag gac ttc atc atc	1062
Ser Val Gly Glu Gly Thr Val Ala Ala Gly Tyr Gln Asp Phe Ile Ile	
250	
255	
260	
265	
tgt gtg gag atg ttc ttt gca gcc ctg gcc ctg cgg cac gcc ttc acc	1110
Cys Val Glu Met Phe Phe Ala Ala Leu Ala Leu Arg His Ala Phe Thr	
270	
275	
280	
tac aag gtc tat gct gac aag agg ctg gac gca caa ggc cgc tgt gcc	1158
Tyr Lys Val Tyr Ala Asp Lys Arg Leu Asp Ala Gln Gly Arg Cys Ala	
285	
290	
295	
ccc atg aag agc atc tcc agc agc ctc aag gag acc atg aac ccg cac	1206
Pro Met Lys Ser Ile Ser Ser Ser Leu Lys Glu Thr Met Asn Pro His	
300	
305	
310	
gac atc gtg cag gac gcc atc cac aac ttc tca cct gcc tac cag cag	1254
Asp Ile Val Gln Asp Ala Ile His Asn Phe Ser Pro Ala Tyr Gln Gln	
315	
320	
325	
tac acg cag cag tcc acc ctg gag cct ggg ccc acc tgg cgt ggt ggc	1302
Tyr Thr Gln Gln Ser Thr Leu Glu Pro Gly Pro Thr Trp Arg Gly Gly	
330	
335	
340	
345	
gcc cac ggc ctc tcc cgc tcc cac agc ctc agt ggc gcc cgc gac aac	1350
Ala His Gly Leu Ser Arg Ser His Ser Leu Ser Gly Ala Arg Asp Asn	
350	
355	
360	
gag aag act ctc ctg ctc agc tct gat gat gaa ttc tag gtgcgggctg	1399
Glu Lys Thr Leu Leu Leu Ser Ser Asp Asp Glu Phe	
365	
370	

5189-2.ST25.txt

cagtggcgga	agtgctggcg	ccatagccac	ggtcaggctg	tgccccacct	ccagcctcac	1459
caccaggcca	ggaggcagct	ggcacagtgc	tcacgccgcc	tttattttatt	ggaccagaaa	1519
cactcacatg	tcacttccag	aggaacgggg	gacagccagg	ctcgcccatg	ggccttcagg	1579
aatattttata	catggcccag	cctgcactgc	ccgggcgagg	gcagaggaca	ctgggagcaa	1639
ggcttatgcc	cctgctgccc	gtcctgtgct	gggggcatgc	tgggaccagc	cgcacccagg	1699
ccccaatgct	tgtgtgtgga	ccagcggctg	cagccttcta	gcccctcctc	cccgcgagac	1759
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ctgggctctt	cccgctgca	tccctccccct	gtccaccttt	gtccagtgtc	agattcacct	1879
caccccgggc	aggagtgggg	atgtgggctc	tctgtgggtc	tcccctcctg	acccaggcct	1939
ctgtggcatg	ctgcaaggat	cagagccaga	caccaggagt	cacaggcccc	acccaggaag	1999
ggcattcagg	gcccctgggc	accgcttctg	ttgaagcagg	ggcttctggg	cccctgggta	2059
tccccacctg	tcgtggccac	acctctgcct	gcctcatgcc	ccttccccct	ggcctaccaa	2119
ggacagccca	cagcccgac	tgccggctca	cttgggtcct	tcctcgatag	ctttgggcag	2179
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tgctgggtcc	tctctctctt	tggggcttct	ccctcccgtt	tcaggggaaa	ggtctgagtc	2299
tccacgtttc	agaccagctt	ctgggggaag	gcagtccggc	agggagaccg	ggaggggtgg	2359
ccacacagtg	gggagctggg	aggtgggggg	aatggtccca	gactcctctc	ggggccccta	2419
tccacacagg	gcctgggtgt	ctaccccatc	tggccccctg	cccatctctt	ctgtgcctta	2479
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tgttcactgg	ggattctttc	ttttgggtcct	tcctggaatg	aacagggttc	ctccctgcca	2899
cctgtgagga	gagttggggc	ccagccgtct	tcctggcctc	cttcctttcc	tcgtggcaga	2959
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gccccgccat	ctgctttcac	caagctgtct	ctccaccgtg	gcttcccttc	tccctccagg	3139
ccaaagtgtc	gctgattccc	actcccttgg	ttttgcctg	cccagcggtg	ctgtttgcgt	3199
ggaggggtgg	gggagctcag	tggcagggaa	tcagcgggtc	gtgggggtcgt	ggggacggga	3259
acatgtgccc	gaccgctcca	tcccctcctc	ctccttagga	tgcataacct	accttgtctt	3319

5189-2.ST25.txt

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ttttttttta aattttcttt ccaggtagag tagctctttg tacataaaga atacttgaaa 3379
aattaattgt atgatgtatg agaagacaga gtctcctagt tttgtatctt gttgtatgac 3439
tgccatgagt tccaccagaa agccactcta ttttggtccc tgtgacattt taaatgcgtg 3499
acagaagtga gcaaataaag tgaggaagaa atctatatat gagataatat agattgtatt 3559
gaaaaaaaaa aaaaaaaaaa 3578

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<210> 14
<211> 373
<212> PRT
<213> Homo sapiens

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<400> 14

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Met Glu Gln Pro Val Phe Leu Met Thr Thr Ala Ala Gln Ala Ile Ser
1 5 10 15

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Gly Phe Phe Val Trp Thr Ala Leu Leu Ile Thr Cys His Gln Ile Tyr
20 25 30

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Met His Leu Arg Cys Tyr Ser Cys Pro Asn Glu Gln Arg Tyr Ile Val
35 40 45

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Arg Ile Leu Phe Ile Val Pro Ile Tyr Ala Phe Asp Ser Trp Leu Ser
50 55 60

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```

Leu Leu Phe Phe Thr Asn Asp Gln Tyr Tyr Val Tyr Phe Gly Thr Val
65 70 75 80

```

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Arg Asp Cys Tyr Glu Ala Leu Val Ile Tyr Asn Phe Leu Ser Leu Cys
85 90 95

```

```

Tyr Glu Tyr Leu Gly Gly Glu Ser Ser Ile Met Ser Glu Ile Arg Gly
100 105 110

```

```

Lys Pro Ile Glu Ser Ser Cys Met Tyr Gly Thr Cys Cys Leu Trp Gly
115 120 125

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```

Lys Thr Tyr Ser Ile Gly Phe Leu Arg Phe Cys Lys Gln Ala Thr Leu
130 135 140

```

```

Gln Phe Cys Val Val Lys Pro Leu Met Ala Val Ser Thr Val Val Leu
145 150 155 160

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```

Gln Ala Phe Gly Lys Tyr Arg Asp Gly Asp Phe Asp Val Thr Ser Gly
165 170 175

```

```

Tyr Leu Tyr Val Thr Ile Ile Tyr Asn Ile Ser Val Ser Leu Ala Leu
180 185 190

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5189-2.ST25.txt

Tyr Ala Leu Phe Leu Phe Tyr Phe Ala Thr Arg Glu Leu Leu Ser Pro
195 200 205

Tyr Ser Pro Val Leu Lys Phe Phe Met Val Lys Ser Val Ile Phe Leu
210 215 220

Ser Phe Trp Gln Gly Met Leu Leu Ala Ile Leu Glu Lys Cys Gly Ala
225 230 235 240

Ile Pro Lys Ile His Ser Ala Arg Val Ser Val Gly Glu Gly Thr Val
245 250 255

Ala Ala Gly Tyr Gln Asp Phe Ile Ile Cys Val Glu Met Phe Phe Ala
260 265 270

Ala Leu Ala Leu Arg His Ala Phe Thr Tyr Lys Val Tyr Ala Asp Lys
275 280 285

Arg Leu Asp Ala Gln Gly Arg Cys Ala Pro Met Lys Ser Ile Ser Ser
290 295 300

Ser Leu Lys Glu Thr Met Asn Pro His Asp Ile Val Gln Asp Ala Ile
305 310 315 320

His Asn Phe Ser Pro Ala Tyr Gln Gln Tyr Thr Gln Gln Ser Thr Leu
325 330 335

Glu Pro Gly Pro Thr Trp Arg Gly Gly Ala His Gly Leu Ser Arg Ser
340 345 350

His Ser Leu Ser Gly Ala Arg Asp Asn Glu Lys Thr Leu Leu Leu Ser
355 360 365

Ser Asp Asp Glu Phe
370

<210> 15
<211> 1332
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (41)..(751)
<223>

<400> 15
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Met Gly Val Glu Gly
1 5

55

5189-2.ST25.txt

tgc acc aag tgc atc aag tac ctg ctc ttc gtc ttc aat ttc gtc ttc	103
Cys Thr Lys Cys Ile Lys Tyr Leu Leu Phe Val Phe Asn Phe Val Phe	
10 15 20	
tgg ctg gct gga ggc gtg atc ctg ggt gtg gcc ctg tgg ctc cgc cat	151
Trp Leu Ala Gly Gly Val Ile Leu Gly Val Ala Leu Trp Leu Arg His	
25 30 35	
gac ccg cag acc acc aac ctc ctg tat ctg gag ctg gga gac aag ccc	199
Asp Pro Gln Thr Thr Asn Leu Tyr Leu Glu Leu Gly Asp Lys Pro	
40 45 50	
gcg ccc aac acc ttc tat gta ggc atc tac atc ctc atc gct gtg ggc	247
Ala Pro Asn Thr Phe Tyr Val Gly Ile Tyr Ile Leu Ile Ala Val Gly	
55 60 65	
gct gtc atg atg ttc gtt ggc ttc ctg ggc tgc tac ggg gcc atc cag	295
Ala Val Met Met Phe Val Gly Phe Leu Gly Cys Tyr Gly Ala Ile Gln	
70 75 80 85	
gaa tcc cag tgc ctg ctg ggg acg ttc ttc acc tgc ctg gtc atc ctg	343
Glu Ser Gln Cys Leu Leu Gly Thr Phe Phe Thr Cys Leu Val Ile Leu	
90 95 100	
ttt gcc tgt gag gtg gcc gcc ggc atc tgg ggc ttt gtc aac aag gac	391
Phe Ala Cys Glu Val Ala Ala Gly Ile Trp Gly Phe Val Asn Lys Asp	
105 110 115	
cag atc gcc aag gat gtg aag cag ttc tat gac cag gcc cta cag cag	439
Gln Ile Ala Lys Asp Val Lys Gln Phe Tyr Asp Gln Ala Leu Gln Gln	
120 125 130	
gcc gtg gtg gat gat gac gcc aac aac gcc aag gct gtg gtg aag acc	487
Ala Val Val Asp Asp Asp Ala Asn Asn Ala Lys Ala Val Val Lys Thr	
135 140 145	
ttc cac gag acg ctt gac tgc tgt ggc tcc agc aca ctg act gct ttg	535
Phe His Glu Thr Leu Asp Cys Cys Gly Ser Ser Thr Leu Thr Ala Leu	
150 155 160 165	
acc acc tca gtg ctc aag aac aat ttg tgt ccc tcg ggc agc aac atc	583
Thr Thr Ser Val Leu Lys Asn Asn Leu Cys Pro Ser Gly Ser Asn Ile	
170 175 180	
atc agc aac ctc ttc aag gag gac tgc cac cag aag atc gat gac ctc	631
Ile Ser Asn Leu Phe Lys Glu Asp Cys His Gln Lys Ile Asp Asp Leu	
185 190 195	
ttc tcc ggg aag ctg tac ctc atc ggc att gct gcc atc gtg gtc gct	679
Phe Ser Gly Lys Leu Tyr Leu Ile Gly Ile Ala Ala Ile Val Val Ala	
200 205 210	
gtg atc atg atc ttc gag atg atc ctg agc atg gtg ctg tgc tgt ggc	727
Val Ile Met Ile Phe Glu Met Ile Leu Ser Met Val Leu Cys Cys Gly	
215 220 225	
atc cgg aac agc tcc gtg tac tga ggccccgcag ctctggccac agggacctct	781
Ile Arg Asn Ser Ser Val Tyr	
230 235	
gcagtgcccc ctaagtgacc cggacacttc cgaggggggcc atcaccgcct gtgtatataa	841
cgtttccggt attactctgc tacacgtagc ctttttactt ttggggtttt gtttttgttc	901

5189-2.ST25.txt

tgaactttcc tgttaccttt tcagggctga cgtcacatgt aggtggcgtg tatgagtgga 961
gacgggcctg ggtcttgggg actggagggc aggggtcctt ctgccctggg gtcccagggt 1021
gctctgcctg ctcagccagg cctctcctgg gagccactcg cccagagact cagcttggcc 1081
aacttggggg gctgtgtcca cccagcccgc ccgtcctgtg ggctgcacag ctcaccttgt 1141
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cctttctaac acgtgcctt caactgtaat cacaacatcc tgactccgtc atttaataaa 1261
gaaggaacat caggcatgct aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1321
aaaaaaaaaa a 1332

<210> 16
<211> 236
<212> PRT
<213> Homo sapiens

<400> 16

Met Gly Val Glu Gly Cys Thr Lys Cys Ile Lys Tyr Leu Leu Phe Val
1 5 10 15

Phe Asn Phe Val Phe Trp Leu Ala Gly Gly Val Ile Leu Gly Val Ala
20 25 30

Leu Trp Leu Arg His Asp Pro Gln Thr Thr Asn Leu Leu Tyr Leu Glu
35 40 45

Leu Gly Asp Lys Pro Ala Pro Asn Thr Phe Tyr Val Gly Ile Tyr Ile
50 55 60

Leu Ile Ala Val Gly Ala Val Met Met Phe Val Gly Phe Leu Gly Cys
65 70 75 80

Tyr Gly Ala Ile Gln Glu Ser Gln Cys Leu Leu Gly Thr Phe Phe Thr
85 90 95

Cys Leu Val Ile Leu Phe Ala Cys Glu Val Ala Ala Gly Ile Trp Gly
100 105 110

Phe Val Asn Lys Asp Gln Ile Ala Lys Asp Val Lys Gln Phe Tyr Asp
115 120 125

Gln Ala Leu Gln Gln Ala Val Val Asp Asp Asp Ala Asn Asn Ala Lys
130 135 140

Ala Val Val Lys Thr Phe His Glu Thr Leu Asp Cys Cys Gly Ser Ser
145 150 155 160

5189-2.ST25.txt

Thr Leu Thr Ala Leu Thr Thr Ser Val Leu Lys Asn Asn Leu Cys Pro
 165 170 175

Ser Gly Ser Asn Ile Ile Ser Asn Leu Phe Lys Glu Asp Cys His Gln
 180 185 190

Lys Ile Asp Asp Leu Phe Ser Gly Lys Leu Tyr Leu Ile Gly Ile Ala
 195 200 205

Ala Ile Val Val Ala Val Ile Met Ile Phe Glu Met Ile Leu Ser Met
 210 215 220

Val Leu Cys Cys Gly Ile Arg Asn Ser Ser Val Tyr
 225 230 235

<210> 17
 <211> 1246
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (112)..(798)
 <223>

<400> 17
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 cgcgcccccc agtccccgcac ccgttcggcc caggctaagt tagccctcac c atg ccg 117
 Met Pro
 1

gtc aaa gga ggc acc aag tgc atc aaa tac ctg ctg ttc gga ttt aac 165
 Val Lys Gly Gly Thr Lys Cys Ile Lys Tyr Leu Leu Phe Gly Phe Asn
 5 10 15

ttc atc ttc tgg ctt gcc ggg att gct gtc ctt gcc att gga cta tgg 213
 Phe Ile Phe Trp Leu Ala Gly Ile Ala Val Leu Ala Ile Gly Leu Trp
 20 25 30

ctc cga ttc gac tct cag acc aag agc atc ttc gag caa gaa act aat 261
 Leu Arg Phe Asp Ser Gln Thr Lys Ser Ile Phe Glu Gln Glu Thr Asn
 35 40 45 50

aat aat aat tcc agc ttc tac aca gga gtc tat att ctg atc gga gcc 309
 Asn Asn Asn Ser Ser Phe Tyr Thr Gly Val Tyr Ile Leu Ile Gly Ala
 55 60 65

ggc gcc ctc atg atg ctg gtg ggc ttc ctg ggc tgc tgc ggg gct gtg 357
 Gly Ala Leu Met Met Leu Val Gly Phe Leu Gly Cys Cys Gly Ala Val
 70 75 80

cag gag tcc cag tgc atg ctg gga ctg ttc ttc ggc ttc ctc ttg gtg 405
 Gln Glu Ser Gln Cys Met Leu Gly Leu Phe Phe Gly Phe Leu Leu Val
 85 90 95

ata ttc gcc att gaa ata gct gcg gcc atc tgg gga tat tcc cac aag 453
 Ile Phe Ala Ile Glu Ile Ala Ala Ala Ile Trp Gly Tyr Ser His Lys
 100 105 110

5189-2.ST25.txt

gat gag gtg att aag gaa gtc cag gag ttt tac aag gac acc tac aac 501
Asp Glu Val Ile Lys Glu Val Gln Glu Phe Tyr Lys Asp Thr Tyr Asn
115 120 125 130
aag ctg aaa acc aag gat gag ccc cag cgg gaa acg ctg aaa gcc atc 549
Lys Leu Lys Thr Lys Asp Glu Pro Gln Arg Glu Thr Leu Lys Ala Ile
135 140 145
cac tat gcg ttg aac tgc tgt ggt ttg gct ggg ggc gtg gaa cag ttt 597
His Tyr Ala Leu Asn Cys Cys Gly Leu Ala Gly Gly Val Glu Gln Phe
150 155 160
atc tca gac atc tgc ccc aag aag gac gta ctc gaa acc ttc acc gtg 645
Ile Ser Asp Ile Cys Pro Lys Lys Asp Val Leu Glu Thr Phe Thr Val
165 170 175
aag tcc tgt cct gat gcc atc aaa gag gtc ttc gac aat aaa ttc cac 693
Lys Ser Cys Pro Asp Ala Ile Lys Glu Val Phe Asp Asn Lys Phe His
180 185 190
atc atc ggc gca gtg ggc atc ggc att gcc gtg gtc atg ata ttt ggc 741
Ile Ile Gly Ala Val Gly Ile Gly Ile Ala Val Val Met Ile Phe Gly
195 200 205 210
atg atc ttc agt atg atc ttg tgc tgt gct atc cgc agg aac cgc gag 789
Met Ile Phe Ser Met Ile Leu Cys Cys Ala Ile Arg Arg Asn Arg Glu
215 220 225
atg gtc tag agtcagctta catccctgag caggaaagtt tacccatgaa 838
Met Val
gattggtggg attttttggt tgtttgtttt gttttgtttg ttgtttgttg tttgtttttt 898
tgccactaat tttagtattc attctgcatt gctagataaa agctgaagtt actttatggt 958
tgtcttttaa tgcttcattc aatattgaca tttgtagttg agcgggggggt ttggtttgct 1018
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tgaaagggtac tatatttgct agactctaga caagatattg tacataaaag aatttttttg 1138
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atgtgataca taataaaaaa ttatgacaat gtcaaaaaaa aaaaaaaa 1246

<210> 18
<211> 228
<212> PRT
<213> Homo sapiens

<400> 18

Met Pro Val Lys Gly Gly Thr Lys Cys Ile Lys Tyr Leu Leu Phe Gly
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Phe Asn Phe Ile Phe Trp Leu Ala Gly Ile Ala Val Leu Ala Ile Gly
20 25 30

Leu Trp Leu Arg Phe Asp Ser Gln Thr Lys Ser Ile Phe Glu Gln Glu
35 40 45

5189-2.ST25.txt

Thr Asn Asn Asn Asn Ser Ser Phe Tyr Thr Gly Val Tyr Ile Leu Ile
50 55 60

Gly Ala Gly Ala Leu Met Met Leu Val Gly Phe Leu Gly Cys Cys Gly
65 70 75 80

Ala Val Gln Glu Ser Gln Cys Met Leu Gly Leu Phe Phe Gly Phe Leu
85 90 95

Leu Val Ile Phe Ala Ile Glu Ile Ala Ala Ala Ile Trp Gly Tyr Ser
100 105 110

His Lys Asp Glu Val Ile Lys Glu Val Gln Glu Phe Tyr Lys Asp Thr
115 120 125

Tyr Asn Lys Leu Lys Thr Lys Asp Glu Pro Gln Arg Glu Thr Leu Lys
130 135 140

Ala Ile His Tyr Ala Leu Asn Cys Cys Gly Leu Ala Gly Gly Val Glu
145 150 155 160

Gln Phe Ile Ser Asp Ile Cys Pro Lys Lys Asp Val Leu Glu Thr Phe
165 170 175

Thr Val Lys Ser Cys Pro Asp Ala Ile Lys Glu Val Phe Asp Asn Lys
180 185 190

Phe His Ile Ile Gly Ala Val Gly Ile Gly Ile Ala Val Val Met Ile
195 200 205

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210 215 220

Arg Glu Met Val
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<210> 19
<211> 1846
<212> DNA
<213> Homo sapiens

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<222> (340)..(969)
<223>

<400> 19
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agtgacaaaa acccctccct ctgccccgc ccctctgcc gagccatata actgctcaac 120

5189-2.ST25.txt

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ttgctggctt gcgcatcagg actggcttta tctcctgact cacggtgcaa aggtgcactc	240
tgcgaacggt aagtccgtcc ccagcgcttg gaatcctacg gccccacag ccggatcccc	300
tcagccttcc aggtcctcaa ctcccgtgga cgctgaaca atg gcc tcc atg ggg Met Ala Ser Met Gly 1 5	354
cta cag gta atg ggc atc gcg ctg gcc gtc ctg ggc tgg ctg gcc gtc Leu Gln Val Met Gly Ile Ala Leu Ala Val Leu Gly Trp Leu Ala Val 10 15 20	402
atg ctg tgc tgc gcg ctg ccc atg tgg cgc gtg acg gcc ttc atc ggc Met Leu Cys Cys Ala Leu Pro Met Trp Arg Val Thr Ala Phe Ile Gly 25 30 35	450
agc aac att gtc acc tcg cag acc atc tgg gag ggc cta tgg atg aac Ser Asn Ile Val Thr Ser Gln Thr Ile Trp Glu Gly Leu Trp Met Asn 40 45 50	498
tgc gtg gtg cag agc acc ggc cag atg cag tgc aag gtg tac gac tcg Cys Val Val Gln Ser Thr Gly Gln Met Gln Cys Lys Val Tyr Asp Ser 55 60 65	546
ctg ctg gca ctg ccg cag gac ctg cag gcg gcc cgc gcc ctc gtc atc Leu Leu Ala Leu Pro Gln Asp Leu Gln Ala Ala Arg Ala Leu Val Ile 70 75 80 85	594
atc agc atc atc gtg gct gct ctg ggc gtg ctg ctg tcc gtg gtg ggg Ile Ser Ile Ile Val Ala Ala Leu Gly Val Leu Leu Ser Val Val Gly 90 95 100	642
ggc aag tgt acc aac tgc ctg gag gat gaa agc gcc aag gcc aag acc Gly Lys Cys Thr Asn Cys Leu Glu Asp Glu Ser Ala Lys Ala Lys Thr 105 110 115	690
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gtg ccg gtg tcc tgg acg gcc cac aac atc atc caa gac ttc tac aat Val Pro Val Ser Trp Thr Ala His Asn Ile Ile Gln Asp Phe Tyr Asn 135 140 145	786
ccg ctg gtg gcc tcc ggg cag aag ccg gag atg ggt gcc tcg ctc tac Pro Leu Val Ala Ser Gly Gln Lys Arg Glu Met Gly Ala Ser Leu Tyr 150 155 160 165	834
gtc ggc tgg gcc gcc tcc ggc ctg ctg ctc ctt ggc ggg ggg ctg ctt Val Gly Trp Ala Ala Ser Gly Leu Leu Leu Leu Gly Gly Gly Leu Leu 170 175 180	882
tgc tgc aac tgt cca ccc cgc aca gac aag cct tac tcc gcc aag tat Cys Cys Asn Cys Pro Pro Arg Thr Asp Lys Pro Tyr Ser Ala Lys Tyr 185 190 195	930
tct gct gcc cgc tct gct gct gcc agc aac tac gtg taa ggtgccacgg Ser Ala Ala Arg Ser Ala Ala Ala Ser Asn Tyr Val 200 205	979
ctccactctg ttctctctg ctttgttctt ccctggactg agctcagcgc aggctgtgac	1039

5189-2.ST25.txt

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<210> 20
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 <212> PRT
 <213> Homo sapiens

<400> 20

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 20 25 30

Thr Ala Phe Ile Gly Ser Asn Ile Val Thr Ser Gln Thr Ile Trp Glu
 35 40 45

Gly Leu Trp Met Asn Cys Val Val Gln Ser Thr Gly Gln Met Gln Cys
 50 55 60

Lys Val Tyr Asp Ser Leu Leu Ala Leu Pro Gln Asp Leu Gln Ala Ala
 65 70 75 80

Arg Ala Leu Val Ile Ile Ser Ile Ile Val Ala Ala Leu Gly Val Leu
 85 90 95

Leu Ser Val Val Gly Gly Lys Cys Thr Asn Cys Leu Glu Asp Glu Ser
 100 105 110

5189-2.ST25.txt

Ala Lys Ala Lys Thr Met Ile Val Ala Gly Val Val Phe Leu Leu Ala
 115 120 125

Gly Leu Met Val Ile Val Pro Val Ser Trp Thr Ala His Asn Ile Ile
 130 135 140

Gln Asp Phe Tyr Asn Pro Leu Val Ala Ser Gly Gln Lys Arg Glu Met
 145 150 155 160

Gly Ala Ser Leu Tyr Val Gly Trp Ala Ala Ser Gly Leu Leu Leu Leu
 165 170 175

Gly Gly Gly Leu Leu Cys Cys Asn Cys Pro Pro Arg Thr Asp Lys Pro
 180 185 190

Tyr Ser Ala Lys Tyr Ser Ala Ala Arg Ser Ala Ala Ala Ser Asn Tyr
 195 200 205

Val

<210> 21
 <211> 1225
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (237)..(962)
 <223>

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 gaagggacag ccctgggtct aggggagaga gtccctgagt gtgagaccg ctttccccgg 180
 tcccagcccc tcccagttcc cccagggacg gccacttcct ggtccccgac gcaacc atg 239
 Met
 1
 gct gaa gaa caa ccg cag gtc gaa ttg ttc gtg aag gct ggc agt gat 287
 Ala Glu Glu Gln Pro Gln Val Glu Leu Phe Val Lys Ala Gly Ser Asp
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 ggg gcc aag att ggg aac tgc cca ttc tcc cag aga ctg ttc atg gta 335
 Gly Ala Lys Ile Gly Asn Cys Pro Phe Ser Gln Arg Leu Phe Met Val
 20 25 30
 ctg tgg ctc aag gga gtc acc ttc aat gtt acc acc gtt gac acc aaa 383
 Leu Trp Leu Lys Gly Val Thr Phe Asn Val Thr Thr Val Asp Thr Lys
 35 40 45
 agg cgg acc gag aca gtg cag aag ctg tgc cca ggg ggg cag ctc cca 431
 Arg Arg Thr Glu Thr Val Gln Lys Leu Cys Pro Gly Gly Gln Leu Pro
 50 55 60 65

5189-2.ST25.txt

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Phe Leu Leu Tyr Gly Thr Glu Val His Thr Asp Thr Asn Lys Ile Glu	
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gaa ttt ctg gag gca gtg ctg tgc cct ccc agg tac ccc aag ctg gca	527
Glu Phe Leu Glu Ala Val Leu Cys Pro Pro Arg Tyr Pro Lys Leu Ala	
85 90 95	
gct ctg aac cct gag tcc aac aca gct ggg ctg gac ata ttt gcc aaa	575
Ala Leu Asn Pro Glu Ser Asn Thr Ala Gly Leu Asp Ile Phe Ala Lys	
100 105 110	
ttt tct gcc tac atc aag aat tca aac cca gca ctc aat gac aat ctg	623
Phe Ser Ala Tyr Ile Lys Asn Ser Asn Pro Ala Leu Asn Asp Asn Leu	
115 120 125	
gag aag gga ctc ctg aaa gcc ctg aag gtt tta gac aat tac tta aca	671
Glu Lys Gly Leu Leu Lys Ala Leu Lys Val Leu Asp Asn Tyr Leu Thr	
130 135 140 145	
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Ser Pro Leu Pro Glu Glu Val Asp Glu Thr Ser Ala Glu Asp Glu Gly	
150 155 160	
gtc tct cag agg aag ttt ttg gat ggc aac gag ctc acc ctg gct gac	767
Val Ser Gln Arg Lys Phe Leu Asp Gly Asn Glu Leu Thr Leu Ala Asp	
165 170 175	
tgc aac ctg ttg cca aag tta cac ata gta cag gtg gtg tgt aag aag	815
Cys Asn Leu Leu Pro Lys Leu His Ile Val Gln Val Val Cys Lys Lys	
180 185 190	
tac cgg gga ttc acc atc ccc gag gcc ttc cgg gga gtg cat cgg tac	863
Tyr Arg Gly Phe Thr Ile Pro Glu Ala Phe Arg Gly Val His Arg Tyr	
195 200 205	
ttg agc aat gcc tac gcc cgg gaa gaa ttc gct tcc acc tgt cca gat	911
Leu Ser Asn Ala Tyr Ala Arg Glu Glu Phe Ala Ser Thr Cys Pro Asp	
210 215 220 225	
gat gag gag atc gag ctc gcc tat gag caa gtg gca aag gcc ctc aaa	959
Asp Glu Glu Ile Glu Leu Ala Tyr Glu Gln Val Ala Lys Ala Leu Lys	
230 235 240	
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ggtaggtttcc acattgctac ccaatggaca cactccaaaa tggccagtgg gcagggaatc	1072
ctggagcact tgttccggga tgggtgtggtg gaagagggga tgagggaaag aaatgggggg	1132
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<210> 22
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 <212> PRT
 <213> Homo sapiens

<400> 22

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15

5189-2.ST25.txt

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20 25 30

Val Leu Trp Leu Lys Gly Val Thr Phe Asn Val Thr Thr Val Asp Thr
35 40 45

Lys Arg Arg Thr Glu Thr Val Gln Lys Leu Cys Pro Gly Gly Gln Leu
50 55 60

Pro Phe Leu Leu Tyr Gly Thr Glu Val His Thr Asp Thr Asn Lys Ile
65 70 75 80

Glu Glu Phe Leu Glu Ala Val Leu Cys Pro Pro Arg Tyr Pro Lys Leu
85 90 95

Ala Ala Leu Asn Pro Glu Ser Asn Thr Ala Gly Leu Asp Ile Phe Ala
100 105 110

Lys Phe Ser Ala Tyr Ile Lys Asn Ser Asn Pro Ala Leu Asn Asp Asn
115 120 125

Leu Glu Lys Gly Leu Leu Lys Ala Leu Lys Val Leu Asp Asn Tyr Leu
130 135 140

Thr Ser Pro Leu Pro Glu Glu Val Asp Glu Thr Ser Ala Glu Asp Glu
145 150 155 160

Gly Val Ser Gln Arg Lys Phe Leu Asp Gly Asn Glu Leu Thr Leu Ala
165 170 175

Asp Cys Asn Leu Leu Pro Lys Leu His Ile Val Gln Val Val Cys Lys
180 185 190

Lys Tyr Arg Gly Phe Thr Ile Pro Glu Ala Phe Arg Gly Val His Arg
195 200 205

Tyr Leu Ser Asn Ala Tyr Ala Arg Glu Glu Phe Ala Ser Thr Cys Pro
210 215 220

Asp Asp Glu Glu Ile Glu Leu Ala Tyr Glu Gln Val Ala Lys Ala Leu
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Lys

<210> 23
<211> 3438
<212> DNA

5189-2.ST25.txt

<213> Homo sapiens

<220>

<221> CDS

<222> (74)..(2560)

<223>

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 Met Leu Gln Gly Thr Cys Ser Val Leu Leu Leu Trp
 1 5 10

gga atc ctg ggg gcc atc cag gcc cag cag cag gag gtc atc tcg ccg 157
 Gly Ile Leu Gly Ala Ile Gln Ala Gln Gln Gln Glu Val Ile Ser Pro
 15 20 25

gac act acc gag aga aac aac aac tgc cca gag aag acc gac tgc ccc 205
 Asp Thr Thr Glu Arg Asn Asn Asn Cys Pro Glu Lys Thr Asp Cys Pro
 30 35 40

atc cac gtg tac ttc gtg ctg gac acc tcg gag agc gtc acc atg cag 253
 Ile His Val Tyr Phe Val Leu Asp Thr Ser Glu Ser Val Thr Met Gln
 45 50 55 60

tcc ccc acg gac atc ctg ctc ttc cac atg aag cag ttc gtg ccg cag 301
 Ser Pro Thr Asp Ile Leu Leu Phe His Met Lys Gln Phe Val Pro Gln
 65 70 75

ttc atc agc cag ctg cag aac gag ttc tac ctg gac cag gtg gcg ctg 349
 Phe Ile Ser Gln Leu Gln Asn Glu Phe Tyr Leu Asp Gln Val Ala Leu
 80 85 90

agc tgg cgc tac ggc ggc ctg cac ttc tct gac cag gtg gag gtg ttc 397
 Ser Trp Arg Tyr Gly Gly Leu His Phe Ser Asp Gln Val Glu Val Phe
 95 100 105

agc cca ccg ggc agc gac cgg gcc tcc ttc atc aag aac ctg cag ggc 445
 Ser Pro Pro Gly Ser Asp Arg Ala Ser Phe Ile Lys Asn Leu Gln Gly
 110 115 120

atc agc tcc ttc cgc cgc ggc acc ttc acc gac tgc gcg ctg gcc aac 493
 Ile Ser Ser Phe Arg Arg Gly Thr Phe Thr Asp Cys Ala Leu Ala Asn
 125 130 135 140

atg acg gag cag atc cgg cag gac cgc agc aag ggc acc gtc cac ttc 541
 Met Thr Glu Gln Ile Arg Gln Asp Arg Ser Lys Gly Thr Val His Phe
 145 150 155

gcc gtg gtc atc acc gac ggc cac gtc acc ggc agc ccc tgc ggg ggc 589
 Ala Val Val Ile Thr Asp Gly His Val Thr Gly Ser Pro Cys Gly Gly
 160 165 170

atc aag ctg cag gcc gag cgg gcc cgc gag gag ggc atc cgg ctc ttc 637
 Ile Lys Leu Gln Ala Glu Arg Ala Arg Glu Glu Gly Ile Arg Leu Phe
 175 180 185

gcc gtg gcc ccc aac cag aac ctg aag gag cag ggc ctg cgg gac atc 685
 Ala Val Ala Pro Asn Gln Asn Leu Lys Glu Gln Gly Leu Arg Asp Ile
 190 195 200

gcc agc acg ccg cac gag ctc tac cgc aac gac tac gcc acc atg ctg 733
 Ala Ser Thr Pro His Glu Leu Tyr Arg Asn Asp Tyr Ala Thr Met Leu

5189-2.ST25.txt

205											215						220	
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gtc Val	atg Met	aaa Lys	cac His 240	gaa Glu	gcc Ala	tac Tyr	gga Gly	gag Glu 245	tgc Cys	tac Tyr	aag Lys	gtg Val	agc Ser 250	tgc Cys	ctg Leu			829
gaa Glu	atc Ile	cct Pro 255	ggg Gly	ccc Pro	tct Ser	ggg Gly	ccc Pro 260	aag Lys	ggc Gly	tac Tyr	cgt Arg	gga Gly 265	cag Gln	aag Lys	ggt Gly			877
gcc Ala	aag Lys 270	ggc Gly	aac Asn	atg Met	ggt Gly	gag Glu 275	ccg Pro	gga Gly	gag Glu	cct Pro	ggc Gly 280	cag Gln	aag Lys	gga Gly	aga Arg			925
cag Gln 285	gga Gly	gac Asp	ccg Pro	ggc Gly	atc Ile 290	gaa Glu	ggc Gly	ccc Pro	att Ile	gga Gly 295	ttc Phe	cca Pro	gga Gly	ccc Pro	aag Lys 300			973
ggc Gly	gtt Val	cct Pro	ggc Gly	ttc Phe 305	aaa Lys	gga Gly	gag Glu	aag Lys	ggt Gly 310	gaa Glu	ttt Phe	gga Gly	gcc Ala	gac Asp 315	ggt Gly			1021
cgc Arg	aag Lys	ggg Gly	gcc Ala 320	cct Pro	ggc Gly	ctg Leu	gct Ala	ggc Gly 325	aag Lys	aac Asn	ggg Gly	acc Thr	gat Asp 330	gga Gly	cag Gln			1069
aag Lys	ggc Gly	aag Lys 335	ctg Leu	ggg Gly	cgc Arg	atc Ile	gga Gly 340	cct Pro	cct Pro	ggc Gly	tgc Cys	aag Lys 345	gga Gly	gac Asp	cct Pro			1117
gga Gly 350	aac Asn	cgg Arg	ggc Gly	ccc Pro	gac Asp	ggt Gly 355	tac Tyr	ccg Pro	ggg Gly	gaa Glu	gca Ala 360	ggg Gly	agt Ser	cca Pro	ggg Gly			1165
gag Glu 365	cga Arg	gga Gly	gac Asp	caa Gln	ggc Gly 370	ggc Gly	aag Lys	ggg Gly	gac Asp	cct Pro 375	ggc Gly	cgc Arg	cca Pro	gga Gly	cgc Arg 380			1213
aga Arg	ggg Gly	ccc Pro	ccg Pro	gga Gly 385	gaa Glu	atc Ile	ggg Gly	gcc Ala	aag Lys 390	gga Gly	agc Ser	aag Lys	ggg Gly	tat Tyr 395	caa Gln			1261
ggc Gly	aac Asn	aat Asn 400	gga Gly	gcc Ala	cca Pro	gga Gly	agt Ser	cct Pro 405	ggt Gly	gtg Val	aaa Lys	gga Gly	gcc Ala 410	aag Lys	ggc Gly			1309
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ggg Gly 445	gac Asp	cct Pro	ggc Gly	cct Pro	gag Glu 450	ggc Gly	ccc Pro	cgc Arg	ggc Gly	ctg Leu 455	gct Ala	gga Gly	gag Glu	gtt Val	ggc Gly 460			1453
aac Asn	aaa Lys	gga Gly	gcc Ala	aag Lys	gga Gly	gac Asp	cga Arg	ggc Gly	ttg Leu	cct Pro	gga Gly	ccc Pro	aga Arg	ggc Gly	ccc Pro			1501

5189-2.ST25.txt

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ggt Gly	gat Asp	gca Ala 495	gga Gly	ccc Pro	cgt Arg	gga Gly	gac Asp 500	tca Ser	gga Gly	cag Gln	cca Pro	ggc Gly 505	ccc Pro	aag Lys	gga Gly	1597			
gac Asp	ccc Pro 510	ggc Gly	agg Arg	cct Pro	gga Gly	ttc Phe 515	agc Ser	tac Tyr	cca Pro	gga Gly	ccc Pro 520	cga Arg	gga Gly	gca Ala	ccc Pro	1645			
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ggc Gly	acc Thr 670	ttt Phe	gag Glu	gcc Ala	atc Ile	cag Gln 675	ctg Leu	gac Asp	gac Asp	gaa Glu	cat His 680	atc Ile	gac Asp	tcc Ser	ctg Leu	2125			
tcg Ser 685	agc Ser	ttc Phe	aag Lys	gag Glu	gct Ala 690	gtc Val	aag Lys	aac Asn	ctc Leu	gag Glu 695	tgg Trp	att Ile	gcg Ala	ggc Gly	ggc Gly 700	2173			
acc Thr	tgg Trp	aca Thr	ccc Pro	tca Ser 705	gcc Ala	ctc Leu	aag Lys	ttt Phe	gcc Ala 710	tac Tyr	gac Asp	cgc Arg	ctc Leu	atc Ile 715	aag Lys	2221			
gag Glu	agc Ser	cgg Arg	cgc Arg	cag Gln	aag Lys	aca Thr	cgt Arg	gtg Val	ttt Phe	gcg Ala	gtg Val	gtc Val	atc Ile	acg Thr	gac Asp	2269			

5189-2.ST25.txt

720	725	730	
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gac cgc gac gtc aca gtg acg gcc atc ggc atc ggg gac atg ttc cac Asp Arg Asp Val Thr Val Thr Ala Ile Gly Ile Gly Asp Met Phe His 750 755 760			2365
gag aag cac gag agt gaa aac ctc tac tcc atc gcc tgc gac aag cca Glu Lys His Glu Ser Glu Asn Leu Tyr Ser Ile Ala Cys Asp Lys Pro 765 770 775 780			2413
cag cag gtg cgc aac atg acg ctg ttc tcc gac ctg gtc gct gag aag Gln Gln Val Arg Asn Met Thr Leu Phe Ser Asp Leu Val Ala Glu Lys 785 790 795			2461
ttc atc gat gac atg gag gac gtc ctc tgc ccg gac cct cag atc gtg Phe Ile Asp Asp Met Glu Asp Val Leu Cys Pro Asp Pro Gln Ile Val 800 805 810			2509
tgc cca gac ctt ccc tgc caa aca ggt ttg gac gga gct gtt ttg tgc Cys Pro Asp Leu Pro Cys Gln Thr Gly Leu Asp Gly Ala Val Leu Cys 815 820 825			2557
tga aaggttttct cggggtccgt ggtgtcccc aaaggtgcca ccgtgcgggt			2610
ctcctagctc cctgccagct tcctgtccct gtgctcactg cccccacgcc tcctgccaag			2670
gccgagccac acacccgctc cacctgcatt tcctctaccg actcgccagc ccaaagccg			2730
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gcaggcctta cagtcgtctc tggacgctcc cttgcagatg caccgtggcc tggcggcgag			2850
ccccgggtca ctttctccg cacggaagag gggccggacg ccaccttccc caggaccatt			2910
cccctgatcc aacagttgct aaacgccacg gagctcacgc aggacccggc cgcctactcc			2970
cagctggtgg ccgtgctggt ctacaccgcc gagcgggcca agttcgccac cggggtagag			3030
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ctcccagcct cttcccatgc tgggtggccac cgtgtccctt gctgcggctg catcttccag			3330
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gcccaccca agtccagaat gacctcgcaa gacccttaac tcactccc			3438
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<212> PRT			
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<400> 24			

5189-2.ST25.txt

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 1 5 10 15
 Ala Ile Gln Ala Gln Gln Gln Glu Val Ile Ser Pro Asp Thr Thr Glu
 20 25 30
 Arg Asn Asn Asn Cys Pro Glu Lys Thr Asp Cys Pro Ile His Val Tyr
 35 40 45
 Phe Val Leu Asp Thr Ser Glu Ser Val Thr Met Gln Ser Pro Thr Asp
 50 55 60
 Ile Leu Leu Phe His Met Lys Gln Phe Val Pro Gln Phe Ile Ser Gln
 65 70 75 80
 Leu Gln Asn Glu Phe Tyr Leu Asp Gln Val Ala Leu Ser Trp Arg Tyr
 85 90 95
 Gly Gly Leu His Phe Ser Asp Gln Val Glu Val Phe Ser Pro Pro Gly
 100 105 110
 Ser Asp Arg Ala Ser Phe Ile Lys Asn Leu Gln Gly Ile Ser Ser Phe
 115 120 125
 Arg Arg Gly Thr Phe Thr Asp Cys Ala Leu Ala Asn Met Thr Glu Gln
 130 135 140
 Ile Arg Gln Asp Arg Ser Lys Gly Thr Val His Phe Ala Val Val Ile
 145 150 155 160
 Thr Asp Gly His Val Thr Gly Ser Pro Cys Gly Gly Ile Lys Leu Gln
 165 170 175
 Ala Glu Arg Ala Arg Glu Glu Gly Ile Arg Leu Phe Ala Val Ala Pro
 180 185 190
 Asn Gln Asn Leu Lys Glu Gln Gly Leu Arg Asp Ile Ala Ser Thr Pro
 195 200 205
 His Glu Leu Tyr Arg Asn Asp Tyr Ala Thr Met Leu Pro Asp Ser Thr
 210 215 220
 Glu Ile Asn Gln Asp Thr Ile Asn Arg Ile Ile Lys Val Met Lys His
 225 230 235 240
 Glu Ala Tyr Gly Glu Cys Tyr Lys Val Ser Cys Leu Glu Ile Pro Gly
 245 250 255

5189-2.ST25.txt

Pro Ser Gly Pro Lys Gly Tyr Arg Gly Gln Lys Gly Ala Lys Gly Asn
260 265 270

Met Gly Glu Pro Gly Glu Pro Gly Gln Lys Gly Arg Gln Gly Asp Pro
275 280 285

Gly Ile Glu Gly Pro Ile Gly Phe Pro Gly Pro Lys Gly Val Pro Gly
290 295 300

Phe Lys Gly Glu Lys Gly Glu Phe Gly Ala Asp Gly Arg Lys Gly Ala
305 310 315 320

Pro Gly Leu Ala Gly Lys Asn Gly Thr Asp Gly Gln Lys Gly Lys Leu
325 330 335

Gly Arg Ile Gly Pro Pro Gly Cys Lys Gly Asp Pro Gly Asn Arg Gly
340 345 350

Pro Asp Gly Tyr Pro Gly Glu Ala Gly Ser Pro Gly Glu Arg Gly Asp
355 360 365

Gln Gly Gly Lys Gly Asp Pro Gly Arg Pro Gly Arg Arg Gly Pro Pro
370 375 380

Gly Glu Ile Gly Ala Lys Gly Ser Lys Gly Tyr Gln Gly Asn Asn Gly
385 390 395 400

Ala Pro Gly Ser Pro Gly Val Lys Gly Ala Lys Gly Gly Pro Gly Pro
405 410 415

Arg Gly Pro Lys Gly Glu Pro Gly Arg Arg Gly Asp Pro Gly Thr Lys
420 425 430

Gly Ser Pro Gly Ser Asp Gly Pro Lys Gly Glu Lys Gly Asp Pro Gly
435 440 445

Pro Glu Gly Pro Arg Gly Leu Ala Gly Glu Val Gly Asn Lys Gly Ala
450 455 460

Lys Gly Asp Arg Gly Leu Pro Gly Pro Arg Gly Pro Gln Gly Ala Leu
465 470 475 480

Gly Glu Pro Gly Lys Gln Gly Ser Arg Gly Asp Pro Gly Asp Ala Gly
485 490 495

Pro Arg Gly Asp Ser Gly Gln Pro Gly Pro Lys Gly Asp Pro Gly Arg
500 505 510

5189-2.ST25.txt

Pro Gly Phe Ser Tyr Pro Gly Pro Arg Gly Ala Pro Gly Glu Lys Gly
 515 520 525
 Glu Pro Gly Pro Arg Gly Pro Glu Gly Gly Arg Gly Asp Phe Gly Leu
 530 535 540
 Lys Gly Glu Pro Gly Arg Lys Gly Glu Lys Gly Glu Pro Ala Asp Pro
 545 550 555 560
 Gly Pro Pro Gly Glu Pro Gly Pro Arg Gly Pro Arg Gly Val Pro Gly
 565 570 575
 Pro Glu Gly Glu Pro Gly Pro Pro Gly Asp Pro Gly Leu Thr Glu Cys
 580 585 590
 Asp Val Met Thr Tyr Val Arg Glu Thr Cys Gly Cys Cys Asp Cys Glu
 595 600 605
 Lys Arg Cys Gly Ala Leu Asp Val Val Phe Val Ile Asp Ser Ser Glu
 610 615 620
 Ser Ile Gly Tyr Thr Asn Phe Thr Leu Glu Lys Asn Phe Val Ile Asn
 625 630 635 640
 Val Val Asn Arg Leu Gly Ala Ile Ala Lys Asp Pro Lys Ser Glu Thr
 645 650 655
 Gly Thr Arg Val Gly Val Val Gln Tyr Ser His Glu Gly Thr Phe Glu
 660 665 670
 Ala Ile Gln Leu Asp Asp Glu His Ile Asp Ser Leu Ser Ser Phe Lys
 675 680 685
 Glu Ala Val Lys Asn Leu Glu Trp Ile Ala Gly Gly Thr Trp Thr Pro
 690 695 700
 Ser Ala Leu Lys Phe Ala Tyr Asp Arg Leu Ile Lys Glu Ser Arg Arg
 705 710 715 720
 Gln Lys Thr Arg Val Phe Ala Val Val Ile Thr Asp Gly Arg His Asp
 725 730 735
 Pro Arg Asp Asp Asp Leu Asn Leu Arg Ala Leu Cys Asp Arg Asp Val
 740 745 750
 Thr Val Thr Ala Ile Gly Ile Gly Asp Met Phe His Glu Lys His Glu
 755 760 765

5189-2.ST25.txt

Ser Glu Asn Leu Tyr Ser Ile Ala Cys Asp Lys Pro Gln Gln Val Arg
770 775 780

Asn Met Thr Leu Phe Ser Asp Leu Val Ala Glu Lys Phe Ile Asp Asp
785 790 795 800

Met Glu Asp Val Leu Cys Pro Asp Pro Gln Ile Val Cys Pro Asp Leu
805 810 815

Pro Cys Gln Thr Gly Leu Asp Gly Ala Val Leu Cys
820 825

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<211> 3389
<212> DNA
<213> Homo sapiens

<220>
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<222> (82)..(2202)
<223>

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cggggctgggt cgccctgcagg g atg ggg gac gag cgg ccc cac tac tac ggg 111
Met Gly Asp Glu Arg Pro His Tyr Tyr Gly 10
aaa cac gga acg cca cag aag tat gat ccc act ttc aaa gga ccc att 159
Lys His Gly Thr Pro Gln Lys Tyr Asp Pro Thr Phe Lys Gly Pro Ile 25
tac aat agg ggc tgc acg gat atc ata tgc tgt gtg ttc ctg ctc ctg 207
Tyr Asn Arg Gly Cys Thr Asp Ile Ile Cys Cys Val Phe Leu Leu Leu 30 35 40
gcc att gtg ggc tac gtg gct gta ggc atc ata gcc tgg act cat gga 255
Ala Ile Val Gly Tyr Val Ala Val Gly Ile Ile Ala Trp Thr His Gly 45 50 55
gac cct cga aag gtg atc tac ccc act gat agc cgg ggc gag ttc tgc 303
Asp Pro Arg Lys Val Ile Tyr Pro Thr Asp Ser Arg Gly Glu Phe Cys 60 65 70
ggg cag aag ggc aca aaa aac gag aac aaa ccc tat ctg ttt tat ttc 351
Gly Gln Lys Gly Thr Lys Asn Glu Asn Lys Pro Tyr Leu Phe Tyr Phe 75 80 85 90
aac att gtg aaa tgt gcc agc ccc ctg gtt ctg ctg gaa ttc caa tgt 399
Asn Ile Val Lys Cys Ala Ser Pro Leu Val Leu Leu Glu Phe Gln Cys 95 100 105
ccc act ccc cag atc tgc gtg gaa aaa tgc ccc gac cgc tac ctc acg 447
Pro Thr Pro Gln Ile Cys Val Glu Lys Cys Pro Asp Arg Tyr Leu Thr 110 115 120
tac ctg aat gct cgc agc tcc cgg gac ttt gag tac tat aag cag ttc 495
Tyr Leu Asn Ala Arg Ser Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe 125 130 135

5189-2.ST25.txt

tgt gtt cct ggc ttc aag aac aat aaa gga gtg gct gag gtg ctt cga Cys Val Pro Gly Phe Lys Asn Asn Lys Gly Val Ala Glu Val Leu Arg 140 145 150	543
gat ggt gac tgc cct gct gtc ctc atc ccc agc aaa ccc ttg gcc cgg Asp Gly Asp Cys Pro Ala Val Leu Ile Pro Ser Lys Pro Leu Ala Arg 155 160 165 170	591
aga tgc ttc ccc gct atc cac gcc tac aag ggt gtc ctg atg gtg ggc Arg Cys Phe Pro Ala Ile His Ala Tyr Lys Gly Val Leu Met Val Gly 175 180 185	639
aat gag acg acc tat gag gat ggg cat ggc tcc cgg aaa aac atc aca Asn Glu Thr Thr Tyr Glu Asp Gly His Gly Ser Arg Lys Asn Ile Thr 190 195 200	687
gac ctg gtg gag ggc gcc aag aaa gcc aat gga gtc cta gag gcg cgg Asp Leu Val Glu Gly Ala Lys Lys Ala Asn Gly Val Leu Glu Ala Arg 205 210 215	735
caa ctc gcc atg cgc ata ttt gaa gat tac acc gtc tct tgg tac tgg Gln Leu Ala Met Arg Ile Phe Glu Asp Tyr Thr Val Ser Trp Tyr Trp 220 225 230	783
att atc ata ggc ctg gtc att gcc atg gcg atg agc ctc ctg ttc atc Ile Ile Ile Gly Leu Val Ile Ala Met Ala Met Ser Leu Leu Phe Ile 235 240 245 250	831
atc ctg ctt cgc ttc ctg gct ggt att atg gtc tgg gtg atg atc atc Ile Leu Leu Arg Phe Leu Ala Gly Ile Met Val Trp Val Met Ile Ile 255 260 265	879
atg gtg att ctg gtg ctg ggc tac gga ata ttt cac tgc tac atg gag Met Val Ile Leu Val Leu Gly Tyr Gly Ile Phe His Cys Tyr Met Glu 270 275 280	927
tac tcc cga ctg cgt ggt gag gcc ggc tct gat gtc tct ttg gtg gac Tyr Ser Arg Leu Arg Gly Glu Ala Gly Ser Asp Val Ser Leu Val Asp 285 290 295	975
ctc ggc ttt cag acg gat ttc cgg gtg tac ctg cac tta cgg cag acc Leu Gly Phe Gln Thr Asp Phe Arg Val Tyr Leu His Leu Arg Gln Thr 300 305 310	1023
tgg ttg gcc ttt atg atc att ctg agt atc ctt gaa gtc att atc atc Trp Leu Ala Phe Met Ile Ile Leu Ser Ile Leu Glu Val Ile Ile Ile 315 320 325 330	1071
ttg ctg ctc atc ttt ctc cgg aag aga att ctc atc gcg att gca ctc Leu Leu Leu Ile Phe Leu Arg Lys Arg Ile Leu Ile Ala Ile Ala Leu 335 340 345	1119
atc aaa gaa gcc agc agg gct gtg gga tac gtc atg tgc tcc ttg ctc Ile Lys Glu Ala Ser Arg Ala Val Gly Tyr Val Met Cys Ser Leu Leu 350 355 360	1167
tac cca ctg gtc acc ttc ttc ttg ctg tgc ctc tgc atc gcc tac tgg Tyr Pro Leu Val Thr Phe Phe Leu Cys Leu Cys Ile Ala Tyr Trp 365 370 375	1215
gcc agc act gct gtc ttc ctg tcc act tcc aac gaa gcg gtc tat aag Ala Ser Thr Ala Val Phe Leu Ser Thr Ser Asn Glu Ala Val Tyr Lys 380 385 390	1263

5189-2.ST25.txt

atc ttt gat gac agc ccc tgc cca ttt act gcg aaa acc tgc aac cca Ile Phe Asp Asp Ser Pro Cys Pro Phe Thr Ala Lys Thr Cys Asn Pro 395 400 405 410	1311
gag acc ttc ccc tcc tcc aat gag tcc cgc caa tgc ccc aat gcc cgt Glu Thr Phe Pro Ser Ser Asn Glu Ser Arg Gln Cys Pro Asn Ala Arg 415 420 425	1359
tgc cag ttc gcc ttc tac ggt ggt gag tgc ggc tac cac cgg gcc ctg Cys Gln Phe Ala Phe Tyr Gly Gly Glu Ser Gly Tyr His Arg Ala Leu 430 435 440	1407
ctg ggc ctg cag atc ttc aat gcc ttc atg ttc ttc tgg ttg gcc aac Leu Gly Leu Gln Ile Phe Asn Ala Phe Met Phe Phe Trp Leu Ala Asn 445 450 455	1455
ttc gtg ctg gcg ctg ggc cag gtc acg ctg gcc ggg gcc ttt gcc tcc Phe Val Leu Ala Leu Gly Gln Val Thr Leu Ala Gly Ala Phe Ala Ser 460 465 470	1503
tac tac tgg gcc ctg cgc aag ccg gac gac ctg ccg gcc ttc ccg ctc Tyr Tyr Trp Ala Leu Arg Lys Pro Asp Asp Leu Pro Ala Phe Pro Leu 475 480 485 490	1551
ttc tct gcc ttt ggc cgg gcg ctc agg tac cac aca ggc tcc ctg gcc Phe Ser Ala Phe Gly Arg Ala Leu Arg Tyr His Thr Gly Ser Leu Ala 495 500 505	1599
ttt ggc gcg ctc atc ctg gcc att gtg cag atc atc cgt gtg ata ctc Phe Gly Ala Leu Ile Leu Ala Ile Val Gln Ile Ile Arg Val Ile Leu 510 515 520	1647
gag tac ctg gat cag cgg ctg aaa gct gca gag aac aag ttt gcc aag Glu Tyr Leu Asp Gln Arg Leu Lys Ala Ala Glu Asn Lys Phe Ala Lys 525 530 535	1695
tgc ctc atg acc tgt ctc aaa tgc tgc ttc tgg tgc ctg gag aag ttc Cys Leu Met Thr Cys Leu Lys Cys Cys Phe Trp Cys Leu Glu Lys Phe 540 545 550	1743
atc aaa ttc ctt aat agg aat gcc tac atc atg att gcc atc tac ggc Ile Lys Phe Leu Asn Arg Asn Ala Tyr Ile Met Ile Ala Ile Tyr Gly 555 560 565 570	1791
acc aat ttc tgc acc tcg gcc agg aat gcc ttc ttc ctg ctc atg aga Thr Asn Phe Cys Thr Ser Ala Arg Asn Ala Phe Phe Leu Leu Met Arg 575 580 585	1839
aac atc atc aga gtg gct gtc ctg gat aaa gtt act gac ttc ctc ttc Asn Ile Ile Arg Val Ala Val Leu Asp Lys Val Thr Asp Phe Leu Phe 590 595 600	1887
ctg ttg ggc aaa ctt ctg atc gtt ggt agt gtg ggg atc ctg gct ttc Leu Leu Gly Lys Leu Leu Ile Val Gly Ser Val Gly Ile Leu Ala Phe 605 610 615	1935
ttc ttc ttc acc cac cgt atc agg atc gtg cag gat aca gca cca ccc Phe Phe Phe Thr His Arg Ile Arg Ile Val Gln Asp Thr Ala Pro Pro 620 625 630	1983
ctc aat tat tac tgg gtt cct ata ctg acg gtg atc gtt ggc tcc tac Leu Asn Tyr Tyr Trp Val Pro Ile Leu Thr Val Ile Val Gly Ser Tyr 635 640 645 650	2031

5189-2.ST25.txt

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ttg att gca cac ggt ttc ttc agc gtc tat ggc atg tgt gtg gac acg      2079
Leu Ile Ala His Gly Phe Phe Ser Val Tyr Gly Met Cys Val Asp Thr
                    655                      660                      665

ctg ttc ctc tgc ttc ttg gag gac ctg gag agg aat gac ggc tcg gcc      2127
Leu Phe Leu Cys Phe Leu Glu Asp Leu Glu Arg Asn Asp Gly Ser Ala
                    670                      675                      680

gag agg cct tac ttc atg tct tcc acc ctc aag aaa ccc ttg aac aag      2175
Glu Arg Pro Tyr Phe Met Ser Ser Thr Leu Lys Lys Pro Leu Asn Lys
                    685                      690                      695

acc aac aag aag gca gcg gag tcc tga aggccccgtg ctccccacct      2222
Thr Asn Lys Lys Ala Ala Glu Ser
                    700                      705

ctcaaggagt ctcatgccgc aggggtgctca gtagctgggt ctgttcccc agcccccttg      2282
gtcacctga agtcttatca ctgccgtctt gccctcccc atgagccaga tcccaccagt      2342
ttctggacgt ggagagtctg gggcatctcc ttcttatgcc aaggggcgct tggagttttc      2402
atggctgccc ctccagactg cgagaaacaa gtaaaaaccc attggggcct cttgatgtct      2462
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cccctggccc caggggaaag aggggggggt ctcccgtttc ctgtgcctgc accagccctg      3302
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<211> 706
<212> PRT
<213> Homo sapiens
<400> 26

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5189-2.ST25.txt

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 Lys Tyr Asp Pro Thr Phe Lys Gly Pro Ile Tyr Asn Arg Gly Cys Thr
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 Asp Ile Ile Cys Cys Val Phe Leu Leu Ala Ile Val Gly Tyr Val
 35 40 45
 Ala Val Gly Ile Ile Ala Trp Thr His Gly Asp Pro Arg Lys Val Ile
 50 55 60
 Tyr Pro Thr Asp Ser Arg Gly Glu Phe Cys Gly Gln Lys Gly Thr Lys
 65 70 75 80
 Asn Glu Asn Lys Pro Tyr Leu Phe Tyr Phe Asn Ile Val Lys Cys Ala
 85 90 95
 Ser Pro Leu Val Leu Leu Glu Phe Gln Cys Pro Thr Pro Gln Ile Cys
 100 105 110
 Val Glu Lys Cys Pro Asp Arg Tyr Leu Thr Tyr Leu Asn Ala Arg Ser
 115 120 125
 Ser Arg Asp Phe Glu Tyr Tyr Lys Gln Phe Cys Val Pro Gly Phe Lys
 130 135 140
 Asn Asn Lys Gly Val Ala Glu Val Leu Arg Asp Gly Asp Cys Pro Ala
 145 150 155 160
 Val Leu Ile Pro Ser Lys Pro Leu Ala Arg Arg Cys Phe Pro Ala Ile
 165 170 175
 His Ala Tyr Lys Gly Val Leu Met Val Gly Asn Glu Thr Thr Tyr Glu
 180 185 190
 Asp Gly His Gly Ser Arg Lys Asn Ile Thr Asp Leu Val Glu Gly Ala
 195 200 205
 Lys Lys Ala Asn Gly Val Leu Glu Ala Arg Gln Leu Ala Met Arg Ile
 210 215 220
 Phe Glu Asp Tyr Thr Val Ser Trp Tyr Trp Ile Ile Ile Gly Leu Val
 225 230 235 240
 Ile Ala Met Ala Met Ser Leu Leu Phe Ile Ile Leu Leu Arg Phe Leu
 245 250 255

5189-2.ST25.txt

Ala Gly Ile Met Val Trp Val Met Ile Ile Met Val Ile Leu Val Leu
260 265 270

Gly Tyr Gly Ile Phe His Cys Tyr Met Glu Tyr Ser Arg Leu Arg Gly
275 280 285

Glu Ala Gly Ser Asp Val Ser Leu Val Asp Leu Gly Phe Gln Thr Asp
290 295 300

Phe Arg Val Tyr Leu His Leu Arg Gln Thr Trp Leu Ala Phe Met Ile
305 310 315 320

Ile Leu Ser Ile Leu Glu Val Ile Ile Ile Leu Leu Leu Ile Phe Leu
325 330 335

Arg Lys Arg Ile Leu Ile Ala Ile Ala Leu Ile Lys Glu Ala Ser Arg
340 345 350

Ala Val Gly Tyr Val Met Cys Ser Leu Leu Tyr Pro Leu Val Thr Phe
355 360 365

Phe Leu Leu Cys Leu Cys Ile Ala Tyr Trp Ala Ser Thr Ala Val Phe
370 375 380

Leu Ser Thr Ser Asn Glu Ala Val Tyr Lys Ile Phe Asp Asp Ser Pro
385 390 395 400

Cys Pro Phe Thr Ala Lys Thr Cys Asn Pro Glu Thr Phe Pro Ser Ser
405 410 415

Asn Glu Ser Arg Gln Cys Pro Asn Ala Arg Cys Gln Phe Ala Phe Tyr
420 425 430

Gly Gly Glu Ser Gly Tyr His Arg Ala Leu Leu Gly Leu Gln Ile Phe
435 440 445

Asn Ala Phe Met Phe Phe Trp Leu Ala Asn Phe Val Leu Ala Leu Gly
450 455 460

Gln Val Thr Leu Ala Gly Ala Phe Ala Ser Tyr Tyr Trp Ala Leu Arg
465 470 475 480

Lys Pro Asp Asp Leu Pro Ala Phe Pro Leu Phe Ser Ala Phe Gly Arg
485 490 495

Ala Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu
500 505 510

5189-2.ST25.txt

Ala Ile Val Gln Ile Ile Arg Val Ile Leu Glu Tyr Leu Asp Gln Arg
515 520 525

Leu Lys Ala Ala Glu Asn Lys Phe Ala Lys Cys Leu Met Thr Cys Leu
530 535 540

Lys Cys Cys Phe Trp Cys Leu Glu Lys Phe Ile Lys Phe Leu Asn Arg
545 550 555 560

Asn Ala Tyr Ile Met Ile Ala Ile Tyr Gly Thr Asn Phe Cys Thr Ser
565 570 575

Ala Arg Asn Ala Phe Phe Leu Leu Met Arg Asn Ile Ile Arg Val Ala
580 585 590

Val Leu Asp Lys Val Thr Asp Phe Leu Phe Leu Leu Gly Lys Leu Leu
595 600 605

Ile Val Gly Ser Val Gly Ile Leu Ala Phe Phe Phe Phe Thr His Arg
610 615 620

Ile Arg Ile Val Gln Asp Thr Ala Pro Pro Leu Asn Tyr Tyr Trp Val
625 630 635 640

Pro Ile Leu Thr Val Ile Val Gly Ser Tyr Leu Ile Ala His Gly Phe
645 650 655

Phe Ser Val Tyr Gly Met Cys Val Asp Thr Leu Phe Leu Cys Phe Leu
660 665 670

Glu Asp Leu Glu Arg Asn Asp Gly Ser Ala Glu Arg Pro Tyr Phe Met
675 680 685

Ser Ser Thr Leu Lys Lys Pro Leu Asn Lys Thr Asn Lys Lys Ala Ala
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Glu Ser
705

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5189-2.ST25.txt

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Gly	Met	Ser	Thr	Tyr	Lys	Arg	Ala	Thr	Leu	Asp	Glu	Glu	Asp	Leu	Val		
			20					25					30				
gac	tcg	ctc	tcc	gag	ggc	gac	gca	tac	ccc	aac	ggc	ctg	cag	gtg	aac		144
Asp	Ser	Leu	Ser	Glu	Gly	Asp	Ala	Tyr	Pro	Asn	Gly	Leu	Gln	Val	Asn		
		35					40				45						
ttc	cac	agc	ccc	cgg	agt	ggc	cag	agg	tgc	tgg	gct	gca	cgg	acc	cag		192
Phe	His	Ser	Pro	Arg	Ser	Gly	Gln	Arg	Cys	Trp	Ala	Ala	Arg	Thr	Gln		
	50					55					60						
gtg	gag	aag	cgg	ctg	gtg	gtg	ttg	gtg	gta	ctt	ctg	gcg	gca	gga	ctg		240
Val	Glu	Lys	Arg	Leu	Val	Val	Leu	Val	Val	Leu	Leu	Ala	Ala	Gly	Leu		
65					70					75					80		
gtg	gcc	tgc	ttg	gca	gca	ctg	ggc	atc	cag	tac	cag	aca	aga	tcc	ccc		288
Val	Ala	Cys	Leu	Ala	Ala	Leu	Gly	Ile	Gln	Tyr	Gln	Thr	Arg	Ser	Pro		
				85					90					95			
tct	gtg	tgc	ctg	agc	gaa	gct	tgt	gtc	tca	gtg	acc	agc	tcc	atc	ttg		336
Ser	Val	Cys	Leu	Ser	Glu	Ala	Cys	Val	Ser	Val	Thr	Ser	Ser	Ile	Leu		
			100					105					110				
agc	tcc	atg	gac	ccc	aca	gtg	gac	ccc	tgc	cat	gac	ttc	ttc	agc	tac		384
Ser	Ser	Met	Asp	Pro	Thr	Val	Asp	Pro	Cys	His	Asp	Phe	Phe	Ser	Tyr		
		115					120					125					
gcc	tgt	ggg	ggc	tgg	atc	aag	gcc	aac	cca	gtc	cct	gat	ggc	cac	tca		432
Ala	Cys	Gly	Gly	Trp	Ile	Lys	Ala	Asn	Pro	Val	Pro	Asp	Gly	His	Ser		
	130					135					140						
cgc	tgg	ggg	acc	ttc	agc	aac	ctc	tgg	gaa	cac	aac	caa	gca	atc	atc		480
Arg	Trp	Gly	Thr	Phe	Ser	Asn	Leu	Trp	Glu	His	Asn	Gln	Ala	Ile	Ile		
145					150					155					160		
aag	cac	ctc	ctc	gaa	aac	tcc	acg	gcc	agc	gtg	agc	gag	gca	gag	aga		528
Lys	His	Leu	Leu	Glu	Asn	Ser	Thr	Ala	Ser	Val	Ser	Glu	Ala	Glu	Arg		
				165					170					175			
aag	gcg	caa	gta	tac	tac	cgt	gcg	tgc	atg	aac	gag	acc	agg	atc	gag		576
Lys	Ala	Gln	Val	Tyr	Tyr	Arg	Ala	Cys	Met	Asn	Glu	Thr	Arg	Ile	Glu		
			180					185					190				
gag	ctc	agg	gcc	aaa	cct	cta	atg	gag	ttg	att	gag	agg	ctc	ggg	ggc		624
Glu	Leu	Arg	Ala	Lys	Pro	Leu	Met	Glu	Leu	Ile	Glu	Arg	Leu	Gly	Gly		
		195					200					205					
tgg	aac	atc	aca	ggt	ccc	tgg	gcc	aag	gac	aac	ttc	cag	gac	acc	ctg		672
Trp	Asn	Ile	Thr	Gly	Pro	Trp	Ala	Lys	Asp	Asn	Phe	Gln	Asp	Thr	Leu		
	210					215					220						
cag	gtg	gtc	acc	gcc	cac	tac	cgc	acc	tca	ccc	ttc	ttc	tct	gtc	tat		720
Gln	Val	Val	Thr	Ala	His	Tyr	Arg	Thr	Ser	Pro	Phe	Phe	Ser	Val	Tyr		
225				230						235					240		
gtc	agt	gcc	gat	tcc	aag	aac	tcc	aac	agc	aac	gtg	atc	cag	gtg	gac		768
Val	Ser	Ala	Asp	Ser	Lys	Asn	Ser	Asn	Ser	Asn	Val	Ile	Gln	Val	Asp		
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cag	tct	ggc	ctg	ggc	ttg	ccc	tcg	aga	gac	tat	tac	ctg	aac	aaa	act		816

5189-2.ST25.txt

Gln	Ser	Gly	Leu	Gly	Leu	Pro	Ser	Arg	Asp	Tyr	Tyr	Leu	Asn	Lys	Thr	
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gaa	aac	gag	aag	gtg	ctg	acc	gga	tat	ctg	aac	tac	atg	gtc	cag	ctg	864
Glu	Asn	Glu	Lys	Val	Leu	Thr	Gly	Tyr	Leu	Asn	Tyr	Met	Val	Gln	Leu	
		275					280					285				
ggg	aag	ctg	ctg	ggc	ggc	ggg	gac	gag	gag	gcc	atc	cgg	ccc	cag	atg	912
Gly	Lys	Leu	Leu	Gly	Gly	Gly	Asp	Glu	Glu	Ala	Ile	Arg	Pro	Gln	Met	
	290					295					300					
cag	cag	atc	ttg	gac	ttt	gag	acg	gca	ctg	gcc	aac	atc	acc	atc	cca	960
Gln	Gln	Ile	Leu	Asp	Phe	Glu	Thr	Ala	Leu	Ala	Asn	Ile	Thr	Ile	Pro	
305					310					315					320	
cag	gag	aag	cgc	cgt	gat	gag	gag	ctc	atc	tac	cac	aaa	gtg	acg	gca	1008
Gln	Glu	Lys	Arg	Arg	Asp	Glu	Glu	Leu	Ile	Tyr	His	Lys	Val	Thr	Ala	
				325					330					335		
gcc	gag	ctg	cag	acc	ttg	gca	ccc	gcc	atc	aac	tgg	ttg	cct	ttt	ctc	1056
Ala	Glu	Leu	Gln	Thr	Leu	Ala	Pro	Ala	Ile	Asn	Trp	Leu	Pro	Phe	Leu	
			340					345					350			
aac	acc	atc	ttc	tac	ccc	gtg	gag	atc	aat	gaa	tcc	gag	cct	att	gtg	1104
Asn	Thr	Ile	Phe	Tyr	Pro	Val	Glu	Ile	Asn	Glu	Ser	Glu	Pro	Ile	Val	
		355					360					365				
gtc	tat	gac	aag	gaa	tac	ctt	gag	cag	atc	tcc	act	ctc	atc	aac	acc	1152
Val	Tyr	Asp	Lys	Glu	Tyr	Leu	Glu	Gln	Ile	Ser	Thr	Leu	Ile	Asn	Thr	
	370					375					380					
acc	gac	aga	tgc	ctg	ctc	aac	aac	tac	atg	atc	tgg	aac	ctg	gtg	cgg	1200
Thr	Asp	Arg	Cys	Leu	Leu	Asn	Asn	Tyr	Met	Ile	Trp	Asn	Leu	Val	Arg	
385					390					395					400	
aaa	aca	agc	tcc	ttc	ctt	gac	cag	cgc	ttt	cag	gac	gcc	gat	gag	aag	1248
Lys	Thr	Ser	Ser	Phe	Leu	Asp	Gln	Arg	Phe	Gln	Asp	Ala	Asp	Glu	Lys	
				405					410					415		
ttc	atg	gaa	gtc	atg	tac	ggg	acc	aag	aag	acc	tgt	ctt	cct	cgc	tgg	1296
Phe	Met	Glu	Val	Met	Tyr	Gly	Thr	Lys	Lys	Thr	Cys	Leu	Pro	Arg	Trp	
			420					425					430			
aag	ttt	tgc	gtg	agt	gac	aca	gaa	aac	aac	ctg	ggc	ttt	gcg	ttg	ggc	1344
Lys	Phe	Cys	Val	Ser	Asp	Thr	Glu	Asn	Asn	Leu	Gly	Phe	Ala	Leu	Gly	
		435					440					445				
ccc	atg	ttt	gtc	aaa	gca	acc	ttc	gcc	gag	gac	agc	aag	agc	ata	gcc	1392
Pro	Met	Phe	Val	Lys	Ala	Thr	Phe	Ala	Glu	Asp	Ser	Lys	Ser	Ile	Ala	
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acc	gag	atc	atc	ctg	gag	att	aag	aag	gca	ttt	gag	gaa	agc	ctg	agc	1440
Thr	Glu	Ile	Ile	Leu	Glu	Ile	Lys	Lys	Ala	Phe	Glu	Glu	Ser	Leu	Ser	
	465				470					475					480	
acc	ctg	aag	tgg	atg	gat	gag	gaa	acc	cga	aaa	tca	gcc	aag	gaa	aag	1488
Thr	Leu	Lys	Trp	Met	Asp	Glu	Glu	Thr	Arg	Lys	Ser	Ala	Lys	Glu	Lys	
				485					490					495		
gcc	gat	gcc	atc	tac	aac	atg	ata	gga	tac	ccc	aac	ttc	atc	atg	gat	1536
Ala	Asp	Ala	Ile	Tyr	Asn	Met	Ile	Gly	Tyr	Pro	Asn	Phe	Ile	Met	Asp	
			500					505					510			
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5189-2.ST25.txt

Pro	Lys	Glu	Leu	Asp	Lys	Val	Phe	Asn	Asp	Tyr	Thr	Ala	Val	Pro	Asp		
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ctc	tac	ttt	gaa	aat	gcc	atg	cgg	ttt	ttc	aac	ttc	tca	tgg	agg	gtc	1632	
Leu	Tyr	Phe	Glu	Asn	Ala	Met	Arg	Phe	Phe	Asn	Phe	Ser	Trp	Arg	Val		
	530					535					540						
act	gcc	gat	cag	ctc	agg	aaa	gcc	ccc	aac	aga	gat	cag	tgg	agc	atg	1680	
Thr	Ala	Asp	Gln	Leu	Arg	Lys	Ala	Pro	Asn	Arg	Asp	Gln	Trp	Ser	Met		
	545				550					555					560		
acc	ccg	ccc	atg	gtg	aac	gcc	tac	tac	tcg	ccc	acc	aag	aat	gag	att	1728	
Thr	Pro	Pro	Met	Val	Asn	Ala	Tyr	Tyr	Ser	Pro	Thr	Lys	Asn	Glu	Ile		
				565					570					575			
gtg	ttt	ccg	gcc	ggg	atc	ctg	cag	gca	cca	ttc	tac	aca	cgc	tcc	tca	1776	
Val	Phe	Pro	Ala	Gly	Ile	Leu	Gln	Ala	Pro	Phe	Tyr	Thr	Arg	Ser	Ser		
			580					585					590				
ccc	aag	gcc	tta	aac	ttt	ggt	ggc	ata	ggt	gtc	gtc	gtg	ggc	cat	gag	1824	
Pro	Lys	Ala	Leu	Asn	Phe	Gly	Gly	Ile	Gly	Val	Val	Val	Gly	His	Glu		
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Leu	Thr	His	Ala	Phe	Asp	Asp	Gln	Gly	Arg	Glu	Tyr	Asp	Lys	Asp	Gly		
	610					615					620						
aac	ctc	cgg	cca	tgg	tgg	aag	aac	tca	tcc	gtg	gag	gcc	ttc	aag	cgt	1920	
Asn	Leu	Arg	Pro	Trp	Trp	Lys	Asn	Ser	Ser	Val	Glu	Ala	Phe	Lys	Arg		
	625				630					635					640		
cag	acc	gag	tgc	atg	gta	gag	cag	tac	agc	aac	tac	agc	gtg	aac	ggg	1968	
Gln	Thr	Glu	Cys	Met	Val	Glu	Gln	Tyr	Ser	Asn	Tyr	Ser	Val	Asn	Gly		
				645					650					655			
gag	ccg	gtg	aac	ggg	cgg	cac	acc	ctg	ggg	gag	aac	atc	gcc	gac	aac	2016	
Glu	Pro	Val	Asn	Gly	Arg	His	Thr	Leu	Gly	Glu	Asn	Ile	Ala	Asp	Asn		
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ggg	ggt	ctc	aag	gcg	gcc	tat	cgg	gct	tac	cag	aac	tgg	gtg	aag	aag	2064	
Gly	Gly	Leu	Lys	Ala	Ala	Tyr	Arg	Ala	Tyr	Gln	Asn	Trp	Val	Lys	Lys		
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aac	ggg	gct	gag	cac	tcg	ctc	ccc	acc	ctg	ggc	ctc	acc	aat	aac	cag	2112	
Asn	Gly	Ala	Glu	His	Ser	Leu	Pro	Thr	Leu	Gly	Leu	Thr	Asn	Asn	Gln		
	690					695					700						
ctc	ttc	ttc	ctg	ggc	ttt	gca	cag	gtc	tgg	tgc	tcc	gtc	cgc	aca	cct	2160	
Leu	Phe	Phe	Leu	Gly	Phe	Ala	Gln	Val	Trp	Cys	Ser	Val	Arg	Thr	Pro		
	705				710					715					720		
gag	agc	tcc	cac	gaa	ggc	ctc	atc	acc	gat	ccc	cac	agc	ccc	tct	cgc	2208	
Glu	Ser	Ser	His	Glu	Gly	Leu	Ile	Thr	Asp	Pro	His	Ser	Pro	Ser	Arg		
				725					730					735			
ttc	cgg	gtc	atc	ggc	tcc	ctc	tcc	aat	tcc	aag	gag	ttc	tca	gaa	cac	2256	
Phe	Arg	Val	Ile	Gly	Ser	Leu	Ser	Asn	Ser	Lys	Glu	Phe		Glu	His		
			740					745					750				
ttc	cgc	tgc	cca	cct	ggc	tca	ccc	atg	aac	ccg	cct	cac	aag	tgc	gaa	2304	
Phe	Arg	Cys	Pro	Pro	Gly	Ser	Pro	Met	Asn	Pro	Pro	His	Lys	Cys	Glu		
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gtc	tgg	taa	ggacgaagcg	gagagagcca	agacggagga	ggggaagggg										2353	

5189-2.ST25.txt

Val Trp
770

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<211> 770
<212> PRT
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Asp Ser Leu Ser Glu Gly Asp Ala Tyr Pro Asn Gly Leu Gln Val Asn
35 40 45

Phe His Ser Pro Arg Ser Gly Gln Arg Cys Trp Ala Ala Arg Thr Gln
50 55 60

Val Glu Lys Arg Leu Val Val Leu Val Val Leu Leu Ala Ala Gly Leu
65 70 75 80

Val Ala Cys Leu Ala Ala Leu Gly Ile Gln Tyr Gln Thr Arg Ser Pro
85 90 95

Ser Val Cys Leu Ser Glu Ala Cys Val Ser Val Thr Ser Ser Ile Leu
100 105 110

Ser Ser Met Asp Pro Thr Val Asp Pro Cys His Asp Phe Phe Ser Tyr
115 120 125

Ala Cys Gly Gly Trp Ile Lys Ala Asn Pro Val Pro Asp Gly His Ser
130 135 140

Arg Trp Gly Thr Phe Ser Asn Leu Trp Glu His Asn Gln Ala Ile Ile
145 150 155 160

Lys His Leu Leu Glu Asn Ser Thr Ala Ser Val Ser Glu Ala Glu Arg
165 170 175

Lys Ala Gln Val Tyr Tyr Arg Ala Cys Met Asn Glu Thr Arg Ile Glu
180 185 190

Glu Leu Arg Ala Lys Pro Leu Met Glu Leu Ile Glu Arg Leu Gly Gly
195 200 205

5189-2.ST25.txt

Trp Asn Ile Thr Gly Pro Trp Ala Lys Asp Asn Phe Gln Asp Thr Leu
 210 215 220
 Gln Val Val Thr Ala His Tyr Arg Thr Ser Pro Phe Phe Ser Val Tyr
 225 230 235 240
 Val Ser Ala Asp Ser Lys Asn Ser Asn Ser Asn Val Ile Gln Val Asp
 245 250 255
 Gln Ser Gly Leu Gly Leu Pro Ser Arg Asp Tyr Tyr Leu Asn Lys Thr
 260 265 270
 Glu Asn Glu Lys Val Leu Thr Gly Tyr Leu Asn Tyr Met Val Gln Leu
 275 280 285
 Gly Lys Leu Leu Gly Gly Gly Asp Glu Glu Ala Ile Arg Pro Gln Met
 290 295 300
 Gln Gln Ile Leu Asp Phe Glu Thr Ala Leu Ala Asn Ile Thr Ile Pro
 305 310 315 320
 Gln Glu Lys Arg Arg Asp Glu Glu Leu Ile Tyr His Lys Val Thr Ala
 325 330 335
 Ala Glu Leu Gln Thr Leu Ala Pro Ala Ile Asn Trp Leu Pro Phe Leu
 340 345 350
 Asn Thr Ile Phe Tyr Pro Val Glu Ile Asn Glu Ser Glu Pro Ile Val
 355 360 365
 Val Tyr Asp Lys Glu Tyr Leu Glu Gln Ile Ser Thr Leu Ile Asn Thr
 370 375 380
 Thr Asp Arg Cys Leu Leu Asn Asn Tyr Met Ile Trp Asn Leu Val Arg
 385 390 395 400
 Lys Thr Ser Ser Phe Leu Asp Gln Arg Phe Gln Asp Ala Asp Glu Lys
 405 410 415
 Phe Met Glu Val Met Tyr Gly Thr Lys Lys Thr Cys Leu Pro Arg Trp
 420 425 430
 Lys Phe Cys Val Ser Asp Thr Glu Asn Asn Leu Gly Phe Ala Leu Gly
 435 440 445
 Pro Met Phe Val Lys Ala Thr Phe Ala Glu Asp Ser Lys Ser Ile Ala
 450 455 460

5189-2.ST25.txt

Thr Glu Ile Ile Leu Glu Ile Lys Lys Ala Phe Glu Glu Ser Leu Ser
 465 470 475 480
 Thr Leu Lys Trp Met Asp Glu Glu Thr Arg Lys Ser Ala Lys Glu Lys
 485 490 495
 Ala Asp Ala Ile Tyr Asn Met Ile Gly Tyr Pro Asn Phe Ile Met Asp
 500 505 510
 Pro Lys Glu Leu Asp Lys Val Phe Asn Asp Tyr Thr Ala Val Pro Asp
 515 520 525
 Leu Tyr Phe Glu Asn Ala Met Arg Phe Phe Asn Phe Ser Trp Arg Val
 530 535 540
 Thr Ala Asp Gln Leu Arg Lys Ala Pro Asn Arg Asp Gln Trp Ser Met
 545 550 555 560
 Thr Pro Pro Met Val Asn Ala Tyr Tyr Ser Pro Thr Lys Asn Glu Ile
 565 570 575
 Val Phe Pro Ala Gly Ile Leu Gln Ala Pro Phe Tyr Thr Arg Ser Ser
 580 585 590
 Pro Lys Ala Leu Asn Phe Gly Gly Ile Gly Val Val Val Gly His Glu
 595 600 605
 Leu Thr His Ala Phe Asp Asp Gln Gly Arg Glu Tyr Asp Lys Asp Gly
 610 615 620
 Asn Leu Arg Pro Trp Trp Lys Asn Ser Ser Val Glu Ala Phe Lys Arg
 625 630 635 640
 Gln Thr Glu Cys Met Val Glu Gln Tyr Ser Asn Tyr Ser Val Asn Gly
 645 650 655
 Glu Pro Val Asn Gly Arg His Thr Leu Gly Glu Asn Ile Ala Asp Asn
 660 665 670
 Gly Gly Leu Lys Ala Ala Tyr Arg Ala Tyr Gln Asn Trp Val Lys Lys
 675 680 685
 Asn Gly Ala Glu His Ser Leu Pro Thr Leu Gly Leu Thr Asn Asn Gln
 690 695 700
 Leu Phe Phe Leu Gly Phe Ala Gln Val Trp Cys Ser Val Arg Thr Pro
 705 710 715 720

5189-2.ST25.txt

Glu Ser Ser His Glu Gly Leu Ile Thr Asp Pro His Ser Pro Ser Arg
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Phe Arg Val Ile Gly Ser Leu Ser Asn Ser Lys Glu Phe Ser Glu His
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Phe Arg Cys Pro Pro Gly Ser Pro Met Asn Pro Pro His Lys Cys Glu
 755 760 765

Val Trp
 770

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 gacgcgaggc tgccgggcta cccggccgag gcttcggggg cgaaactaa tgggactggc 180
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 aagctgtccg ggggcgcgta gcccggagtc ccagtgtggc ccggaggaac ggagcccgtg 300
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 Met Ala Arg Pro Gly Gln Arg Trp Leu Gly Lys Trp Leu Val
 1 5 10
 gcg atg gtc gtg tgg gcg ctg tgc cgg ctc gcc aca ccg ctg gcc aag 879
 Ala Met Val Val Trp Ala Leu Cys Arg Leu Ala Thr Pro Leu Ala Lys
 15 20 25 30
 aac ctg gag ccc gta tcc tgg agc tcc ctc aac ccc aag ttc ctg agt 927
 Asn Leu Glu Pro Val Ser Trp Ser Ser Leu Asn Pro Lys Phe Leu Ser
 35 40 45

5189-2.ST25.txt

ggg aag ggc ttg gtg atc tat ccg aaa att gga gac aag ctg gac atc	975
Gly Lys Gly Leu Val Ile Tyr Pro Lys Ile Gly Asp Lys Leu Asp Ile	
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Ile Cys Pro Arg Ala Glu Ala Gly Arg Pro Tyr Glu Tyr Tyr Lys Leu	
65 70 75	
tac ctg gtg cgg cct gag cag gca gct gcc tgt agc aca gtt ctc gac	1071
Tyr Leu Val Arg Pro Glu Gln Ala Ala Cys Ser Thr Val Leu Asp	
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ccc aac gtg ttg gtc acc tgc aat agg cca gag cag gaa ata cgc ttt	1119
Pro Asn Val Leu Val Thr Cys Asn Arg Pro Glu Gln Glu Ile Arg Phe	
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acc atc aag ttc cag gag ttc agc ccc aac tac atg ggc ctg gag ttc	1167
Thr Ile Lys Phe Gln Glu Phe Ser Pro Asn Tyr Met Gly Leu Glu Phe	
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Lys Lys His His Asp Tyr Tyr Ile Thr Ser Thr Ser Asn Gly Ser Leu	
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Glu Gly Leu Glu Asn Arg Glu Gly Gly Val Cys Arg Thr Arg Thr Met	
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Lys Ile Ile Met Lys Val Gly Gln Asp Pro Asn Ala Val Thr Pro Glu	
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cag ctg act acc agc agg ccc agc aag gag gca gac aac act gtc aag	1359
Gln Leu Thr Thr Ser Arg Pro Ser Lys Glu Ala Asp Asn Thr Val Lys	
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Met Ala Thr Gln Ala Pro Gly Ser Arg Gly Ser Leu Gly Asp Ser Asp	
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ggc aag cat gag act gtg aac cag gaa gag aag agt ggc cca ggt gca	1455
Gly Lys His Glu Thr Val Asn Gln Glu Glu Lys Ser Gly Pro Gly Ala	
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Ser Gly Gly Ser Ser Gly Asp Pro Asp Gly Phe Phe Asn Ser Lys Val	
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Ala Leu Phe Ala Ala Val Gly Ala Gly Cys Val Ile Phe Leu Leu Ile	
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Ile Ile Phe Leu Thr Val Leu Leu Lys Leu Arg Lys Arg His Arg	
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Lys His Thr Gln Gln Arg Ala Ala Leu Ser Leu Ser Thr Leu Ala	
275 280 285	
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Ser Pro Lys Gly Gly Ser Gly Thr Ala Gly Thr Glu Pro Ser Asp Ile	
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5189-2.ST25.txt

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Lys Val Ser Gly Asp Tyr Gly His Pro Val Tyr Ile Val Gln Glu Met	
320 325 330	
ccg ccc cag agc ccg gcg aac atc tac tac aag gtc tga gtgccccgga	1840
Pro Pro Gln Ser Pro Ala Asn Ile Tyr Tyr Lys Val	
335 340 345	
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5189-2.ST25.txt

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Gly Leu Val Ile Tyr Pro Lys Ile Gly Asp Lys Leu Asp Ile Ile Cys
 50 55 60

Pro Arg Ala Glu Ala Gly Arg Pro Tyr Glu Tyr Tyr Lys Leu Tyr Leu
 65 70 75 80

Val Arg Pro Glu Gln Ala Ala Ala Cys Ser Thr Val Leu Asp Pro Asn
 85 90 95

Val Leu Val Thr Cys Asn Arg Pro Glu Gln Glu Ile Arg Phe Thr Ile
 100 105 110

Lys Phe Gln Glu Phe Ser Pro Asn Tyr Met Gly Leu Glu Phe Lys Lys
 115 120 125

His His Asp Tyr Tyr Ile Thr Ser Thr Ser Asn Gly Ser Leu Glu Gly
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Leu Glu Asn Arg Glu Gly Gly Val Cys Arg Thr Arg Thr Met Lys Ile
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Ile Met Lys Val Gly Gln Asp Pro Asn Ala Val Thr Pro Glu Gln Leu
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Thr Thr Ser Arg Pro Ser Lys Glu Ala Asp Asn Thr Val Lys Met Ala
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Thr Gln Ala Pro Gly Ser Arg Gly Ser Leu Gly Asp Ser Asp Gly Lys
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His Glu Thr Val Asn Gln Glu Glu Lys Ser Gly Pro Gly Ala Ser Gly
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Gly Ser Ser Gly Asp Pro Asp Gly Phe Phe Asn Ser Lys Val Ala Leu

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Thr	Gln	Gln 275	Arg	Ala	Ala	Ala	Leu 280	Ser	Leu	Ser	Thr	Leu 285	Ala	Ser	Pro												
Lys	Gly 290	Gly	Ser	Gly	Thr	Ala 295	Gly	Thr	Glu	Pro	Ser 300	Asp	Ile	Ile	Ile												
Pro 305	Leu	Arg	Thr	Thr	Glu 310	Asn	Asn	Tyr	Cys	Pro 315	His	Tyr	Glu	Lys	Val 320												
Ser	Gly	Asp	Tyr	Gly 325	His	Pro	Val	Tyr	Ile 330	Val	Gln	Glu	Met	Pro 335	Pro												
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cgc Arg 95	atg Met	ggc Gly	att Ile	gag Glu	atc Ile 100	ctc Leu	agc Ser	ttc Phe	acc Thr	atc Ile 105	aag Lys	gac Asp	gtg Val	tat Tyr	gac Asp 110	456
aaa Lys	gtg Val	gac Asp	tat Tyr	ctg Leu 115	agc Ser	tcc Ser	ctg Leu	ggc Gly	aag Lys 120	acg Thr	cag Gln	act Thr	gcc Ala	gtg Val 125	gtg Val	504
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atc Ile	cgg Arg	gaa Glu 145	gct Ala	gag Glu	tgc Cys	aag Lys	aag Lys 150	gag Glu	atg Met	ctg Leu	gat Asp	gtg Val 155	aag Lys	ttc Phe	atg Met	600
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cgc Arg	aaa Lys	atc Ile	ggg Gly	gag Glu 275	gcg Ala	gaa Glu	gcg Ala	gca Ala	gtc Val 280	atc Ile	gag Glu	gcg Ala	atg Met	ggc Gly 285	aag Lys	984
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5189-2.ST25.txt

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gcc gag ctg cct gcc tct gtg cat gcc ctc aca ggc gtg gac ctg tct			1224
Ala Glu Leu Pro Ala Ser Val His Ala Leu Thr Gly Val Asp Leu Ser			
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5189-2.ST25.txt

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 35 40 45
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 50 55 60
 Ile Leu Gly Thr Leu Thr Val Glu Gln Ile Tyr Gln Asp Arg Asp Gln
 65 70 75 80
 Phe Ala Lys Leu Val Arg Glu Val Ala Ala Pro Asp Val Gly Arg Met
 85 90 95
 Gly Ile Glu Ile Leu Ser Phe Thr Ile Lys Asp Val Tyr Asp Lys Val
 100 105 110
 Asp Tyr Leu Ser Ser Leu Gly Lys Thr Gln Thr Ala Val Val Gln Arg
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 Glu Ala Glu Cys Lys Lys Glu Met Leu Asp Val Lys Phe Met Ala Asp
 145 150 155 160
 Thr Lys Ile Ala Asp Ser Lys Arg Ala Phe Glu Leu Gln Lys Ser Ala
 165 170 175
 Phe Ser Glu Glu Val Asn Ile Lys Thr Ala Glu Ala Gln Leu Ala Tyr
 180 185 190
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 195 200 205
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 210 215 220
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 225 230 235 240
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 245 250 255

5189-2.ST25.txt

Val Lys Gln Val Leu Leu Ala Gln Ala Glu Ala Glu Lys Ile Arg Lys
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Ile Gly Glu Ala Glu Ala Ala Val Ile Glu Ala Met Gly Lys Ala Glu
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Ala Glu Arg Met Lys Leu Lys Ala Glu Ala Tyr Gln Lys Tyr Gly Asp
290 295 300

Ala Ala Lys Met Ala Leu Val Leu Glu Ala Leu Pro Gln Ile Ala Ala
305 310 315 320

Lys Ile Ala Ala Pro Leu Thr Lys Val Asp Glu Ile Val Val Leu Ser
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Gly Asp Asn Ser Lys Val Thr Ser Glu Val Asn Arg Leu Leu Ala Glu
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Trp Thr Leu Leu Val Cys Cys Leu Leu Thr Pro Gly Val Gln Gly Gln
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Glu Phe Leu Leu Arg Val Glu Pro Gln Asn Pro Val Leu Ser Ala Gly
35 40 45

ggg tcc ctg ttt gtg aac tgc agt act gat tgt ccc agc tct gag aaa 192
Gly Ser Leu Phe Val Asn Cys Ser Thr Asp Cys Pro Ser Ser Glu Lys
50 55 60

atc gcc ttg gag acg tcc cta tca aag gag ctg gtg gcc agt ggc atg 240
Ile Ala Leu Glu Thr Ser Leu Ser Lys Glu Leu Val Ala Ser Gly Met
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5189-2.ST25.txt

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atc Ile	acc Thr	gtg Val	tac Tyr	agg Arg 115	ctc Leu	ccg Pro	gag Glu	cgt Arg	gtg Val 120	gag Glu	ctg Leu	gca Ala	ccc Pro	ctg Leu 125	cct Pro	384
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ccg Pro	cgc Arg	ctc Leu 225	gtg Val	gcc Ala	ccc Pro	cgg Arg	ttc Phe 230	ttg Leu	gag Glu	gtg Val	gaa Glu	acg Thr 235	tcg Ser	tgg Trp	ccg Pro	720
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gtg Val 320	aac Asn	ctc Leu	agc Ser	gag Glu	ccc Pro 325	acc Thr	gcc Ala	cat His	gag Glu	ggg Gly	tcc Ser 330	aca Thr	gtg Val	acc Thr	gtg Val	1008
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5189-2.ST25.txt

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gat Asp 415	aaa Lys	acg Thr	aga Arg	cac His	gtc Val 420	ctg Leu	cag Gln	tgc Cys	caa Gln	gcc Ala 425	agg Arg	ggc Gly	aac Asn	ccg Pro	tac Tyr 430	1296
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ggg Gly	atc Ile	ccg Pro	ttc Phe 450	ttc Phe	gtc Val	aac Asn	gta Val	aca Thr 455	cat His	aat Asn	ggt Gly	act Thr	tat Tyr 460	cag Gln	tgc Cys	1392
caa Gln	gcg Ala	tcc Ser 465	agc Ser	tca Ser	cga Arg	ggc Gly 470	aaa Lys	tac Tyr	acc Thr	ctg Leu	gtc Val	gtg Val 475	gtg Val	atg Met	gac Asp	1440
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ctg Leu 495	acc Thr	ctg Leu	ggc Gly	gtg Val	gtg Val 500	act Thr	atc Ile	gta Val	ctg Leu	gcc Ala 505	tta Leu	atg Met	tac Tyr	gtc Val	ttc Phe 510	1536
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Leu Phe Val Asn Cys Ser Thr Asp Cys Pro Ser Ser Glu Lys Ile Ala
50      55      60

Leu Glu Thr Ser Leu Ser Lys Glu Leu Val Ala Ser Gly Met Gly Trp
65      70      75      80

Ala Ala Phe Asn Leu Ser Asn Val Thr Gly Asn Ser Arg Ile Leu Cys
85      90      95

Ser Val Tyr Cys Asn Gly Ser Gln Ile Thr Gly Ser Ser Asn Ile Thr
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Val Tyr Arg Leu Pro Glu Arg Val Glu Leu Ala Pro Leu Pro Pro Trp
115     120     125

Gln Pro Val Gly Gln Asn Phe Thr Leu Arg Cys Gln Val Glu Asp Gly
130     135     140

Ser Pro Arg Thr Ser Leu Thr Val Val Leu Leu Arg Trp Glu Glu Glu
145     150     155     160

Leu Ser Arg Gln Pro Ala Val Glu Glu Pro Ala Glu Val Thr Ala Thr
165     170     175

Val Leu Ala Ser Arg Asp Asp His Gly Ala Pro Phe Ser Cys Arg Thr
180     185     190

Glu Leu Asp Met Gln Pro Gln Gly Leu Gly Leu Phe Val Asn Thr Ser
195     200     205

Ala Pro Arg Gln Leu Arg Thr Phe Val Leu Pro Val Thr Pro Pro Arg
210     215     220

Leu Val Ala Pro Arg Phe Leu Glu Val Glu Thr Ser Trp Pro Val Asp
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Cys Thr Leu Asp Gly Leu Phe Pro Ala Ser Glu Ala Gln Val Tyr Leu
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5189-2.ST25.txt

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290 295 300

Ala Arg Glu Asn Leu Thr Val Phe Ser Phe Leu Gly Pro Ile Val Asn
305 310 315 320

Leu Ser Glu Pro Thr Ala His Glu Gly Ser Thr Val Thr Val Ser Cys
325 330 335

Met Ala Gly Ala Arg Val Gln Val Thr Leu Asp Gly Val Pro Ala Ala
340 345 350

Ala Pro Gly Gln Pro Ala Gln Leu Gln Leu Asn Ala Thr Glu Ser Asp
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Asp Gly Arg Ser Phe Phe Cys Ser Ala Thr Leu Glu Val Asp Gly Glu
370 375 380

Phe Leu His Arg Asn Ser Ser Val Gln Leu Arg Val Leu Tyr Gly Pro
385 390 395 400

Lys Ile Asp Arg Ala Thr Cys Pro Gln His Leu Lys Trp Lys Asp Lys
405 410 415

Thr Arg His Val Leu Gln Cys Gln Ala Arg Gly Asn Pro Tyr Pro Glu
420 425 430

Leu Arg Cys Leu Lys Glu Gly Ser Ser Arg Glu Val Pro Val Gly Ile
435 440 445

Pro Phe Phe Val Asn Val Thr His Asn Gly Thr Tyr Gln Cys Gln Ala
450 455 460

Ser Ser Ser Arg Gly Lys Tyr Thr Leu Val Val Val Met Asp Ile Glu
465 470 475 480

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485 490 495

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5189-2.ST25.txt

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Arg Ala Glu
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 Met Pro Pro Pro Arg Thr Gly Arg Gly Leu Leu Trp Leu Gly
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 ctg gtt ctg agc tcc gtc tgc gtc gcc ctc gga tcc gaa acg cag gcc 217
 Leu Val Leu Ser Ser Val Cys Val Ala Leu Gly Ser Glu Thr Gln Ala
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 aac tcg acc aca gat gct ctg aac gtt ctt ctc atc atc gtg gat gac 265
 Asn Ser Thr Thr Asp Ala Leu Asn Val Leu Leu Ile Ile Val Asp Asp
 35 40 45
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 Leu Arg Pro Ser Leu Gly Cys Tyr Gly Asp Lys Leu Val Arg Ser Pro
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 Asn Ile Asp Gln Leu Ala Ser His Ser Leu Leu Phe Gln Asn Ala Phe
 65 70 75
 gcg cag caa gca gtg tgc gcc ccg agc cgc gtt tct ttc ctc act ggc 409
 Ala Gln Gln Ala Val Cys Ala Pro Ser Arg Val Ser Phe Leu Thr Gly
 80 85 90
 agg aga cct gac acc acc cgc ctg tac gac ttc aac tcc tac tgg agg 457
 Arg Arg Pro Asp Thr Thr Arg Leu Tyr Asp Phe Asn Ser Tyr Trp Arg
 95 100 105 110
 gtg cac gct gga aac ttc tcc acc atc ccc cag tac ttc aag gag aat 505
 Val His Ala Gly Asn Phe Ser Thr Ile Pro Gln Tyr Phe Lys Glu Asn
 115 120 125
 ggc tat gtg acc atg tcg gtg gga aaa gtc ttt cac cct ggg ata tct 553
 Gly Tyr Val Thr Met Ser Val Gly Lys Val Phe His Pro Gly Ile Ser
 130 135 140
 tct aac cat acc gat gat tct ccg tat agc tgg tct ttt cca cct tat 601

5189-2.ST25.txt

Ser	Asn	His	Thr	Asp	Asp	Ser	Pro	Tyr	Ser	Trp	Ser	Phe	Pro	Pro	Tyr		
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His	Pro	Ser	Ser	Glu	Lys	Tyr	Glu	Asn	Thr	Lys	Thr	Cys	Arg	Gly	Pro		
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gat	gga	gaa	ctc	cat	gcc	aac	ctg	ctt	tgc	cct	gtg	gat	gtg	ctg	gat		697
Asp	Gly	Glu	Leu	His	Ala	Asn	Leu	Leu	Cys	Pro	Val	Asp	Val	Leu	Asp		
	175				180					185					190		
gtt	ccc	gag	ggc	acc	ttg	cct	gac	aaa	cag	agc	act	gag	caa	gcc	ata		745
Val	Pro	Glu	Gly	Thr	Leu	Pro	Asp	Lys	Gln	Ser	Thr	Glu	Gln	Ala	Ile		
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cag	ttg	ttg	gaa	aag	atg	aaa	acg	tca	gcc	agt	cct	ttc	ttc	ctg	gcc		793
Gln	Leu	Leu	Glu	Lys	Met	Lys	Thr	Ser	Ala	Ser	Pro	Phe	Phe	Leu	Ala		
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gtt	ggg	tat	cat	aag	cca	cac	atc	ccc	ttc	aga	tac	ccc	aag	gaa	ttt		841
Val	Gly	Tyr	His	Lys	Pro	His	Ile	Pro	Phe	Arg	Tyr	Pro	Lys	Glu	Phe		
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cag	aag	ttg	tat	ccc	ttg	gag	aac	atc	acc	ctg	gcc	ccc	gat	ccc	gag		889
Gln	Lys	Leu	Tyr	Pro	Leu	Glu	Asn	Ile	Thr	Leu	Ala	Pro	Asp	Pro	Glu		
	240					245					250						
gtc	cct	gat	ggc	cta	ccc	cct	gtg	gcc	tac	aac	ccc	tgg	atg	gac	atc		937
Val	Pro	Asp	Gly	Leu	Pro	Pro	Val	Ala	Tyr	Asn	Pro	Trp	Met	Asp	Ile		
	255				260					265					270		
agg	caa	cgg	gaa	gac	gtc	caa	gcc	tta	aac	atc	agt	gtg	ccg	tat	ggt		985
Arg	Gln	Arg	Glu	Asp	Val	Gln	Ala	Leu	Asn	Ile	Ser	Val	Pro	Tyr	Gly		
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cca	att	cct	gtg	gac	ttt	cag	cgg	aaa	atc	cgc	cag	agc	tac	ttt	gcc		1033
Pro	Ile	Pro	Val	Asp	Phe	Gln	Arg	Lys	Ile	Arg	Gln	Ser	Tyr	Phe	Ala		
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tct	gtg	tca	tat	ttg	gat	aca	cag	gtc	ggc	cgc	ctc	ttg	agt	gct	ttg		1081
Ser	Val	Ser	Tyr	Leu	Asp	Thr	Gln	Val	Gly	Arg	Leu	Leu	Ser	Ala	Leu		
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gac	gat	ctt	cag	ctg	gcc	aac	agc	acc	atc	att	gca	ttt	acc	tcg	gat		1129
Asp	Asp	Leu	Gln	Leu	Ala	Asn	Ser	Thr	Ile	Ile	Ala	Phe	Thr	Ser	Asp		
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cat	ggt	ttc	ctc	atg	agg	aca	aat	acc	tga	ttttgaataa	agcagcattc						1179
His	Gly	Phe	Leu	Met	Arg	Thr	Asn	Thr									
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5189-2.ST25.txt

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Thr Thr Asp Ala Leu Asn Val Leu Leu Ile Ile Val Asp Asp Leu Arg
35 40 45

Pro Ser Leu Gly Cys Tyr Gly Asp Lys Leu Val Arg Ser Pro Asn Ile
50 55 60

Asp Gln Leu Ala Ser His Ser Leu Leu Phe Gln Asn Ala Phe Ala Gln
65 70 75 80

Gln Ala Val Cys Ala Pro Ser Arg Val Ser Phe Leu Thr Gly Arg Arg
85 90 95

Pro Asp Thr Thr Arg Leu Tyr Asp Phe Asn Ser Tyr Trp Arg Val His
100 105 110

Ala Gly Asn Phe Ser Thr Ile Pro Gln Tyr Phe Lys Glu Asn Gly Tyr
115 120 125

Val Thr Met Ser Val Gly Lys Val Phe His Pro Gly Ile Ser Ser Asn
130 135 140

His Thr Asp Asp Ser Pro Tyr Ser Trp Ser Phe Pro Pro Tyr His Pro
145 150 155 160

Ser Ser Glu Lys Tyr Glu Asn Thr Lys Thr Cys Arg Gly Pro Asp Gly
165 170 175

Glu Leu His Ala Asn Leu Leu Cys Pro Val Asp Val Leu Asp Val Pro
180 185 190

Glu Gly Thr Leu Pro Asp Lys Gln Ser Thr Glu Gln Ala Ile Gln Leu
195 200 205

Leu Glu Lys Met Lys Thr Ser Ala Ser Pro Phe Phe Leu Ala Val Gly
210 215 220

Tyr His Lys Pro His Ile Pro Phe Arg Tyr Pro Lys Glu Phe Gln Lys
225 230 235 240

Leu Tyr Pro Leu Glu Asn Ile Thr Leu Ala Pro Asp Pro Glu Val Pro
245 250 255

5189-2.ST25.txt

Asp Gly Leu Pro Pro Val Ala Tyr Asn Pro Trp Met Asp Ile Arg Gln
260 265 270

Arg Glu Asp Val Gln Ala Leu Asn Ile Ser Val Pro Tyr Gly Pro Ile
275 280 285

Pro Val Asp Phe Gln Arg Lys Ile Arg Gln Ser Tyr Phe Ala Ser Val
290 295 300

Ser Tyr Leu Asp Thr Gln Val Gly Arg Leu Leu Ser Ala Leu Asp Asp
305 310 315 320

Leu Gln Leu Ala Asn Ser Thr Ile Ile Ala Phe Thr Ser Asp His Gly
325 330 335

Phe Leu Met Arg Thr Asn Thr
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cttcaccgcc gccgccgtcg ccgccgggtg ggagccgggc cgggcagccg gagcgcggcc 180
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gcgctgcgct cgacccccgcc cgcgccgccg ccgccgccgc ctctgccgct gccgctgcct 300
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Met Arg Ala Gln
1

ggc cgg ggg cgc ctt ccc cgg cgg ctg ctg ctg ctg ctg gcg ctc tgg 464
Gly Arg Gly Arg Leu Pro Arg Arg Leu Leu Leu Leu Ala Leu Trp
5 10 15 20

gtg cag gcg gcg cgg ccc atg ggc tat ttc gag ctg cag ctg agc gcg 512
Val Gln Ala Ala Arg Pro Met Gly Tyr Phe Glu Leu Gln Leu Ser Ala
25 30 35

ctg cgg aac gtg aac ggg gag ctg ctg agc ggc gcc tgc tgt gac ggc 560
Leu Arg Asn Val Asn Gly Glu Leu Leu Ser Gly Ala Cys Cys Asp Gly
40 45 50

gac ggc cgg aca acg cgc gcg ggg ggc tgc ggc cac gac gag tgc gac 608

5189-2.ST25.txt

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Thr	Tyr	Val	Arg	Val	Cys	Leu	Lys	Glu	Tyr	Gln	Ala	Lys	Val	Thr	Pro	
	70					75				80						
acg	ggg	ccc	tgc	agc	tac	ggc	cac	ggc	gcc	acg	ccc	gtg	ctg	ggc	ggc	704
Thr	Gly	Pro	Cys	Ser	Tyr	Gly	His	Gly	Ala	Thr	Pro	Val	Leu	Gly	Gly	
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Asn	Ser	Phe	Tyr	Leu	Pro	Pro	Ala	Gly	Ala	Ala	Gly	Asp	Arg	Ala	Arg	
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gcg	cgg	gcc	cgg	gcc	ggc	ggc	gac	cag	gac	ccg	ggc	ctc	gtc	gtc	atc	800
Ala	Arg	Ala	Arg	Ala	Gly	Gly	Asp	Gln	Asp	Pro	Gly	Leu	Val	Val	Ile	
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ccc	ttc	cag	ttc	gcc	tgg	ccg	cgc	tcc	ttt	acc	ctc	atc	gtg	gag	gcc	848
Pro	Phe	Gln	Phe	Ala	Trp	Pro	Arg	Ser	Phe	Thr	Leu	Ile	Val	Glu	Ala	
		135					140					145				
tgg	gac	tgg	gac	aac	gat	acc	acc	ccg	aat	gag	gag	ctg	ctg	atc	gag	896
Trp	Asp	Trp	Asp	Asn	Asp	Thr	Thr	Pro	Asn	Glu	Glu	Leu	Leu	Ile	Glu	
	150					155						160				
cga	gtg	tcg	cat	gcc	ggc	atg	atc	aac	ccg	gag	gac	cgc	tgg	aag	agc	944
Arg	Val	Ser	His	Ala	Gly	Met	Ile	Asn	Pro	Glu	Asp	Arg	Trp	Lys	Ser	
165					170					175					180	
ctg	cac	ttc	agc	ggc	cac	gtg	gcg	cac	ctg	gag	ctg	cag	atc	cgc	gtg	992
Leu	His	Phe	Ser	Gly	His	Val	Ala	His	Leu	Glu	Leu	Gln	Ile	Arg	Val	
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cgc	tgc	gac	gag	aac	tac	tac	agc	gcc	act	tgc	aac	aag	ttc	tgc	cgg	1040
Arg	Cys	Asp	Glu	Asn	Tyr	Tyr	Ser	Ala	Thr	Cys	Asn	Lys	Phe	Cys	Arg	
			200					205					210			
ccc	cgc	aac	gac	ttt	ttc	ggc	cac	tac	acc	tgc	gac	cag	tac	ggc	aac	1088
Pro	Arg	Asn	Asp	Phe	Phe	Gly	His	Tyr	Thr	Cys	Asp	Gln	Tyr	Gly	Asn	
		215					220					225				
aag	gcc	tgc	atg	gac	ggc	tgg	atg	ggc	aag	gag	tgc	aag	gaa	gct	gtg	1136
Lys	Ala	Cys	Met	Asp	Gly	Trp	Met	Gly	Lys	Glu	Cys	Lys	Glu	Ala	Val	
	230					235					240					
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Cys	Lys	Gln	Gly	Cys	Asn	Leu	Leu	His	Gly	Gly	Cys	Thr	Val	Pro	Gly	
245					250					255					260	
gag	tgc	agg	tgc	agc	tac	ggc	tgg	caa	ggg	agg	ttc	tgc	gat	gag	tgt	1232
Glu	Cys	Arg	Cys	Ser	Tyr	Gly	Trp	Gln	Gly	Arg	Phe	Cys	Asp	Glu	Cys	
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gtc	ccc	tac	ccc	ggc	tgc	gtg	cat	ggc	agt	tgt	gtg	gag	ccc	tgg	cag	1280
Val	Pro	Tyr	Pro	Gly	Cys	Val	His	Gly	Ser	Cys	Val	Glu	Pro	Trp	Gln	
			280					285					290			
tgc	aac	tgt	gag	acc	aac	tgg	ggc	ggc	ctg	ctc	tgt	gac	aaa	gac	ctg	1328
Cys	Asn	Cys	Glu	Thr	Asn	Trp	Gly	Gly	Leu	Leu	Cys	Asp	Lys	Asp	Leu	
		295					300					305				
aac	tac	tgt	ggc	agc	cac	cac	ccc	tgc	acc	aac	gga	ggc	acg	tgc	atc	1376

5189-2.ST25.txt

Asn	Tyr	Cys	Gly	Ser	His	His	Pro	Cys	Thr	Asn	Gly	Gly	Thr	Cys	Ile	
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Asn	Ala	Glu	Pro	Asp	Gln	Tyr	Arg	Cys	Thr	Cys	Pro	Asp	Gly	Tyr	Ser	
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ggc	agg	aac	tgt	gag	aag	gct	gag	cac	gcc	tgc	acc	tcc	aac	ccg	tgt	1472
Gly	Arg	Asn	Cys	Glu	Lys	Ala	Glu	His	Ala	Cys	Thr	Ser	Asn	Pro	Cys	
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gcc	aac	ggg	ggc	tct	tgc	cat	gag	gtg	ccg	tcc	ggc	ttc	gaa	tgc	cac	1520
Ala	Asn	Gly	Gly	Ser	Cys	His	Glu	Val	Pro	Ser	Gly	Phe	Glu	Cys	His	
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tgc	cca	tcg	ggc	tgg	agc	ggg	ccc	acc	tgt	gcc	ctt	gac	atc	gat	gag	1568
Cys	Pro	Ser	Gly	Trp	Ser	Gly	Pro	Thr	Cys	Ala	Leu	Asp	Ile	Asp	Glu	
		375					380					385				
tgt	gct	tcg	aac	ccg	tgt	gcg	gcc	ggt	ggc	acc	tgt	gtg	gac	cag	gtg	1616
Cys	Ala	Ser	Asn	Pro	Cys	Ala	Ala	Gly	Gly	Thr	Cys	Val	Asp	Gln	Val	
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gac	ggc	ttt	gag	tgc	atc	tgc	ccc	gag	cag	tgg	gtg	ggg	gcc	acc	tgc	1664
Asp	Gly	Phe	Glu	Cys	Ile	Cys	Pro	Glu	Gln	Trp	Val	Gly	Ala	Thr	Cys	
405					410					415					420	
cag	ctg	gac	gcc	aat	gag	tgt	gaa	ggg	aag	cca	tgc	ctt	aac	gct	ttt	1712
Gln	Leu	Asp	Ala	Asn	Glu	Cys	Glu	Gly	Lys	Pro	Cys	Leu	Asn	Ala	Phe	
				425					430					435		
tct	tgc	aaa	aac	ctg	att	ggc	ggc	tat	tac	tgt	gat	tgc	atc	ccg	ggc	1760
Ser	Cys	Lys	Asn	Leu	Ile	Gly	Gly	Tyr	Tyr	Cys	Asp	Cys	Ile	Pro	Gly	
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Trp	Lys	Gly	Ile	Asn	Cys	His	Ile	Asn	Val	Asn	Asp	Cys	Arg	Gly	Gln	
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tgt	cag	cat	ggg	ggc	acc	tgc	aag	gac	ctg	gtg	aac	ggg	tac	cag	tgt	1856
Cys	Gln	His	Gly	Gly	Thr	Cys	Lys	Asp	Leu	Val	Asn	Gly	Tyr	Gln	Cys	
	470					475					480					
gtg	tgc	cca	cgg	ggc	ttc	gga	ggc	cgg	cat	tgc	gag	ctg	gaa	cga	gac	1904
Val	Cys	Pro	Arg	Gly	Phe	Gly	Gly	Arg	His	Cys	Glu	Leu	Glu	Arg	Asp	
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gag	tgt	gcc	agc	agc	ccc	tgc	cac	agc	ggc	ggc	ctc	tgc	gag	gac	ctg	1952
Glu	Cys	Ala	Ser	Ser	Pro	Cys	His	Ser	Gly	Gly	Leu	Cys	Glu	Asp	Leu	
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gcc	gac	ggc	ttc	cac	tgc	cac	tgc	ccc	cag	ggc	ttc	tcc	ggg	cct	ctc	2000
Ala	Asp	Gly	Phe	His	Cys	His	Cys	Pro	Gln	Gly	Phe	Ser	Gly	Pro	Leu	
			520					525					530			
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Cys	Glu	Val	Asp	Val	Asp	Leu	Cys	Glu	Pro	Ser	Pro	Cys	Arg	Asn	Gly	
		535					540					545				
gct	cgc	tgc	tat	aac	ctg	gag	ggt	gac	tat	tac	tgc	gcc	tgc	cct	gat	2096
Ala	Arg	Cys	Tyr	Asn	Leu	Glu	Gly	Asp	Tyr	Tyr	Cys	Ala	Cys	Pro	Asp	
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5189-2.ST25.txt

Asp 565	Phe	Gly	Gly	Lys	Asn 570	Cys	Ser	Val	Pro	Arg 575	Glu	Pro	Cys	Pro	Gly 580	
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atg Met	cct Pro	ggc Gly	aca Thr 600	gca Ala	gcc Ala	tcc Ser	ggc Gly	gtg Val 605	tgt Cys	ggc Gly	ccc Pro	cat His	gga Gly 610	cgc Arg	tgc Cys	2240
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ggc Gly 725	acc Thr	tgc Cys	tac Tyr	gac Asp	agc Ser 730	ggc Gly	gac Asp	acc Thr	ttc Phe	cgc Arg 735	tgc Cys	gcc Ala	tgc Cys	ccc Pro	ccc Pro 740	2624
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aat Asn 790	acc Thr	aac Asn	gac Asp	tgc Cys	aac Asn	cct Pro 795	ctg Leu	cct Pro	tgc Cys	tac Tyr	aat Asn 800	ggt Gly	ggc Gly	atc Ile	tgt Cys	2816
gtt Val 805	gac Asp	ggc Gly	gtc Val	aac Asn	tgg Trp 810	ttc Phe	cgc Arg	tgc Cys	gag Glu	tgt Cys 815	gca Ala	cct Pro	ggc Gly	ttc Phe	gcg Ala 820	2864
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5189-2.ST25.txt

Gly	Pro	Asp	Cys	Arg	Ile	Asn	Ile	Asp	Glu	Cys	Gln	Ser	Ser	Pro	Cys		
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Ala	Tyr	Gly	Ala	Thr	Cys	Val	Asp	Glu	Ile	Asn	Gly	Tyr	Arg	Cys	Ser		
			840					845					850				
tgc	cca	ccc	ggc	cga	gcc	ggc	ccc	cgg	tgc	cag	gaa	gtg	atc	ggg	ttc		3008
Cys	Pro	Pro	Gly	Arg	Ala	Gly	Pro	Arg	Cys	Gln	Glu	Val	Ile	Gly	Phe		
		855					860					865					
ggg	aga	tcc	tgc	tgg	tcc	cgg	ggc	act	ccg	ttc	cca	cac	gga	agc	tcc		3056
Gly	Arg	Ser	Cys	Trp	Ser	Arg	Gly	Thr	Pro	Phe	Pro	His	Gly	Ser	Ser		
	870					875					880						
tgg	gtg	gaa	gac	tgc	aac	agc	tgc	cgc	tgc	ctg	gat	ggc	cgc	cgt	gac		3104
Trp	Val	Glu	Asp	Cys	Asn	Ser	Cys	Arg	Cys	Leu	Asp	Gly	Arg	Arg	Asp		
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tgc	agc	aag	gtg	tgg	tgc	gga	tgg	aag	cct	tgt	ctg	ctg	gcc	ggc	cag		3152
Cys	Ser	Lys	Val	Trp	Cys	Gly	Trp	Lys	Pro	Cys	Leu	Leu	Ala	Gly	Gln		
				905					910					915			
ccc	gag	gcc	ctg	agc	gcc	cag	tgc	cca	ctg	ggg	caa	agg	tgc	ctg	gag		3200
Pro	Glu	Ala	Leu	Ser	Ala	Gln	Cys	Pro	Leu	Gly	Gln	Arg	Cys	Leu	Glu		
			920					925					930				
aag	gcc	cca	ggc	cag	tgt	ctg	cga	cca	ccc	tgt	gag	gcc	tgg	ggg	gag		3248
Lys	Ala	Pro	Gly	Gln	Cys	Leu	Arg	Pro	Pro	Cys	Glu	Ala	Trp	Gly	Glu		
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tgc	ggc	gca	gaa	gag	cca	ccg	agc	acc	ccc	tgc	ctg	cca	cgc	tcc	ggc		3296
Cys	Gly	Ala	Glu	Glu	Pro	Pro	Ser	Thr	Pro	Cys	Leu	Pro	Arg	Ser	Gly		
	950					955					960						
cac	ctg	gac	aat	aac	tgt	gcc	cgc	ctc	acc	ttg	cat	ttc	aac	cgt	gac		3344
His	Leu	Asp	Asn	Asn	Cys	Ala	Arg	Leu	Thr	Leu	His	Phe	Asn	Arg	Asp		
965					970					975					980		
cac	gtg	ccc	cag	ggc	acc	acg	gtg	ggc	gcc	att	tgc	tcc	ggg	atc	cgc		3392
His	Val	Pro	Gln	Gly	Thr	Thr	Val	Gly	Ala	Ile	Cys	Ser	Gly	Ile	Arg		
				985					990					995			
tcc	ctg	cca	gcc	aca	agg	gct	gtg	gca	cgg	gac	cgc	ctg	ctg	gtg			3437
Ser	Leu	Pro	Ala	Thr	Arg	Ala	Val	Ala	Arg	Asp	Arg	Leu	Leu	Val			
			1000					1005					1010				
ttg	ctt	tgc	gac	cgg	gcg	tcc	tcg	ggg	gcc	agt	gcc	gtg	gag	gtg			3482
Leu	Leu	Cys	Asp	Arg	Ala	Ser	Ser	Gly	Ala	Ser	Ala	Val	Glu	Val			
			1015					1020					1025				
gcc	gtg	tcc	ttc	agc	cct	gcc	agg	gac	ctg	cct	gac	agc	agc	ctg			3527
Ala	Val	Ser	Phe	Ser	Pro	Ala	Arg	Asp	Leu	Pro	Asp	Ser	Ser	Leu			
			1030					1035					1040				
atc	cag	ggc	gcg	gcc	cac	gcc	atc	gtg	gcc	gcc	atc	acc	cag	cgg			3572
Ile	Gln	Gly	Ala	Ala	His	Ala	Ile	Val	Ala	Ala	Ile	Thr	Gln	Arg			
			1045					1050					1055				
ggg	aac	agc	tca	ctg	ctc	ctg	gct	gtc	acc	gag	gtc	aag	gtg	gag			3617
Gly	Asn	Ser	Ser	Leu	Leu	Leu	Ala	Val	Thr	Glu	Val	Lys	Val	Glu			
			1060					1065					1070				
acg	gtt	gtt	acg	ggc	ggc	tct	tcc	aca	ggg	ctg	ctg	gtg	cct	gtg			3662

5189-2.ST25.txt

Thr	Val	Val	Thr	Gly	Gly	Ser	Ser	Thr	Gly	Leu	Leu	Val	Pro	Val		
			1075					1080					1085			
ctg	tgt	ggt	gcc	ttc	agc	gtg	ctg	tgg	ctg	gcg	tgc	gtg	gtc	ctg		3707
Leu	Cys	Gly	Ala	Phe	Ser	Val	Leu	Trp	Leu	Ala	Cys	Val	Val	Leu		
			1090					1095					1100			
tgc	gtg	tgg	tgg	aca	cgc	aag	cgc	agg	aaa	gag	cgg	gag	agg	agc		3752
Cys	Val	Trp	Trp	Thr	Arg	Lys	Arg	Arg	Lys	Glu	Arg	Glu	Arg	Ser		
			1105					1110					1115			
cgg	ctg	ccg	cgg	gag	gag	agc	gcc	aac	aac	cag	tgg	gcc	ccg	ctc		3797
Arg	Leu	Pro	Arg	Glu	Glu	Ser	Ala	Asn	Asn	Gln	Trp	Ala	Pro	Leu		
			1120					1125					1130			
aac	ccc	atc	cgc	aac	ccc	atc	gag	cgg	ccg	ggg	ggc	cac	aag	gac		3842
Asn	Pro	Ile	Arg	Asn	Pro	Ile	Glu	Arg	Pro	Gly	Gly	His	Lys	Asp		
			1135					1140					1145			
gtg	ctc	tac	cag	tgc	aag	aac	ttc	acg	ccg	ccg	ccg	cgc	agg	gcg		3887
Val	Leu	Tyr	Gln	Cys	Lys	Asn	Phe	Thr	Pro	Pro	Pro	Arg	Arg	Ala		
			1150					1155					1160			
gac	gag	gcg	ctg	ccc	ggg	ccg	gcc	ggc	cac	gcg	gcc	gtc	agg	gag		3932
Asp	Glu	Ala	Leu	Pro	Gly	Pro	Ala	Gly	His	Ala	Ala	Val	Arg	Glu		
			1165					1170					1175			
gat	gag	gag	gac	gag	gat	ctg	ggc	cgc	ggt	gag	gag	gac	tcc	ctg		3977
Asp	Glu	Glu	Asp	Glu	Asp	Leu	Gly	Arg	Gly	Glu	Glu	Asp	Ser	Leu		
			1180					1185					1190			
gag	gcg	gag	aag	ttc	ctc	tca	cac	aaa	ttc	acc	aaa	gat	cct	ggc		4022
Glu	Ala	Glu	Lys	Phe	Leu	Ser	His	Lys	Phe	Thr	Lys	Asp	Pro	Gly		
			1195					1200					1205			
cgc	tcg	ccg	ggg	agg	ccg	gcc	cac	tgg	gcc	tca	ggc	ccc	aaa	gtg		4067
Arg	Ser	Pro	Gly	Arg	Pro	Ala	His	Trp	Ala	Ser	Gly	Pro	Lys	Val		
			1210					1215					1220			
gac	aac	cgc	gcg	gtc	agg	agc	atc	aat	gag	gcc	cgc	tac	gcc	ggc		4112
Asp	Asn	Arg	Ala	Val	Arg	Ser	Ile	Asn	Glu	Ala	Arg	Tyr	Ala	Gly		
			1225					1230					1235			
aag	gag	tag	ggg	cgg	ctg	c	ag	ctg	ggg	cc	g	ggg	acc	cagg	gcc	ctcggtg
Lys	Glu															4161
ggagccatgc	cgtctgccgg	acccggaggc	cgaggccatg	tgcatagttt	ctttattttg											4221
tgtaaaaaaa	ccaccaaaaa	caaaaaccaa	atgtttattt	tctacgtttc	tttaaccttg											4281
tataaattat	tcagtaactg	tcaggctgaa	aacaatggag	tattctcgga	tagttgctat											4341
ttttgtaaag	tttccgtgcg	tggcactcgc	tgtatgaaag	gagagagcaa	aggggtgtctg											4401
cgtcgtcacc	aaatcgtagc	gtttgttacc	agaggttgtg	cactgtttac	agaatcttcc											4461
ttttattcct	cactcggggt	tctctgtggc	tccaggccaa	agtgccggtg	agacctatgg											4521
ctgtgttggt	gtggcccatg	gctgttggtg	ggaccctgtg	ctgatggtgt	ggcctgtggc											4581
tgtcgggtggg	actcgtggct	gtcaatggga	cctgtggctg	tcggtgggac	ctacggtggt											4641
cgggtgggacc	ctggttattg	atgtggccct	ggctgccggc	acggcccgtg	gctgttgacg											4701

5189-2.ST25.txt

cacctgtggt tgtagtggg gcctgaggtc atcggcgtgg cccaaggccg gcaggtcaac 4761
ctcgcgcttg ctggccagtc caccctgcct gccgtctgtg cttcctcctg cccagaacgc 4821
ccgctccagc gatctctcca ctgtgctttc agaagtgtcc ttcctgctgc gcagttctcc 4881
catcctggga cggcggcagt attgaagctc gtgacaagtg ccttcacaca gaccctcgc 4941
aactgtccac gcgtgccgtg gcaccaggcg ctgcccacct gccggccccg gccgcccctc 5001
ctcgtgaaag tgcatttttg taaatgtgta catattaaag gaagcactct gtatatattga 5061
ttgaataatg ccacca 5077

<210> 38
<211> 1238
<212> PRT
<213> Homo sapiens

<400> 38

Met Arg Ala Gln Gly Arg Gly Arg Leu Pro Arg Arg Leu Leu Leu Leu
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Leu Ala Leu Trp Val Gln Ala Ala Arg Pro Met Gly Tyr Phe Glu Leu
20 25 30

Gln Leu Ser Ala Leu Arg Asn Val Asn Gly Glu Leu Leu Ser Gly Ala
35 40 45

Cys Cys Asp Gly Asp Gly Arg Thr Thr Arg Ala Gly Gly Cys Gly His
50 55 60

Asp Glu Cys Asp Thr Tyr Val Arg Val Cys Leu Lys Glu Tyr Gln Ala
65 70 75 80

Lys Val Thr Pro Thr Gly Pro Cys Ser Tyr Gly His Gly Ala Thr Pro
85 90 95

Val Leu Gly Gly Asn Ser Phe Tyr Leu Pro Pro Ala Gly Ala Ala Gly
100 105 110

Asp Arg Ala Arg Ala Arg Ala Arg Ala Gly Gly Asp Gln Asp Pro Gly
115 120 125

Leu Val Val Ile Pro Phe Gln Phe Ala Trp Pro Arg Ser Phe Thr Leu
130 135 140

Ile Val Glu Ala Trp Asp Trp Asp Asn Asp Thr Thr Pro Asn Glu Glu
145 150 155 160

Leu Leu Ile Glu Arg Val Ser His Ala Gly Met Ile Asn Pro Glu Asp
165 170 175

5189-2.ST25.txt

Arg Trp Lys Ser₁₈₀ Leu His Phe Ser Gly₁₈₅ His Val Ala His Leu₁₉₀ Glu Leu
Gln Ile Arg₁₉₅ Val Arg Cys Asp Glu₂₀₀ Asn Tyr Tyr Ser Ala₂₀₅ Thr Cys Asn
Lys Phe₂₁₀ Cys Arg Pro Arg Asn₂₁₅ Asp Phe Phe Gly His₂₂₀ Tyr Thr Cys Asp
Gln Tyr Gly Asn Lys Ala₂₃₀ Cys Met Asp Gly Trp₂₃₅ Met Gly Lys Glu Cys₂₄₀
Lys Glu Ala Val Cys₂₄₅ Lys Gln Gly Cys Asn₂₅₀ Leu Leu His Gly Gly₂₅₅ Cys
Thr Val Pro Gly₂₆₀ Glu Cys Arg Cys Ser₂₆₅ Tyr Gly Trp Gln Gly₂₇₀ Arg Phe
Cys Asp Glu₂₇₅ Cys Val Pro Tyr Pro₂₈₀ Gly Cys Val His Gly₂₈₅ Ser Cys Val
Glu Pro Trp Gln Cys Asn Cys₂₉₅ Glu Thr Asn Trp Gly₃₀₀ Gly Leu Leu Cys
Asp Lys Asp Leu Asn Tyr₃₁₀ Cys Gly Ser His His₃₁₅ Pro Cys Thr Asn Gly₃₂₀
Gly Thr Cys Ile Asn₃₂₅ Ala Glu Pro Asp Gln₃₃₀ Tyr Arg Cys Thr Cys₃₃₅ Pro
Asp Gly Tyr Ser₃₄₀ Gly Arg Asn Cys Glu₃₄₅ Lys Ala Glu His Ala₃₅₀ Cys Thr
Ser Asn Pro₃₅₅ Cys Ala Asn Gly Gly₃₆₀ Ser Cys His Glu Val₃₆₅ Pro Ser Gly
Phe Glu Cys His Cys Pro Ser₃₇₅ Gly Trp Ser Gly Pro₃₈₀ Thr Cys Ala Leu
Asp Ile Asp Glu Cys Ala₃₉₀ Ser Asn Pro Cys Ala₃₉₅ Ala Gly Gly Thr Cys₄₀₀
Val Asp Gln Val Asp₄₀₅ Gly Phe Glu Cys Ile₄₁₀ Cys Pro Glu Gln Trp Val₄₁₅
Gly Ala Thr Cys₄₂₀ Gln Leu Asp Ala Asn₄₂₅ Glu Cys Glu Gly Lys₄₃₀ Pro Cys

5189-2.ST25.txt

Leu Asn Ala Phe Ser Cys Lys Asn Leu Ile Gly Gly Tyr Tyr Cys Asp
 435 440 445
 Cys Ile Pro Gly Trp Lys Gly Ile Asn Cys His Ile Asn Val Asn Asp
 450 455 460
 Cys Arg Gly Gln Cys Gln His Gly Gly Thr Cys Lys Asp Leu Val Asn
 465 470 475 480
 Gly Tyr Gln Cys Val Cys Pro Arg Gly Phe Gly Gly Arg His Cys Glu
 485 490 495
 Leu Glu Arg Asp Glu Cys Ala Ser Ser Pro Cys His Ser Gly Gly Leu
 500 505 510
 Cys Glu Asp Leu Ala Asp Gly Phe His Cys His Cys Pro Gln Gly Phe
 515 520 525
 Ser Gly Pro Leu Cys Glu Val Asp Val Asp Leu Cys Glu Pro Ser Pro
 530 535 540
 Cys Arg Asn Gly Ala Arg Cys Tyr Asn Leu Glu Gly Asp Tyr Tyr Cys
 545 550 555 560
 Ala Cys Pro Asp Asp Phe Gly Gly Lys Asn Cys Ser Val Pro Arg Glu
 565 570 575
 Pro Cys Pro Gly Gly Ala Cys Arg Val Ile Asp Gly Cys Gly Ser Asp
 580 585 590
 Ala Gly Pro Gly Met Pro Gly Thr Ala Ala Ser Gly Val Cys Gly Pro
 595 600 605
 His Gly Arg Cys Val Ser Gln Pro Gly Gly Asn Phe Ser Cys Ile Cys
 610 615 620
 Asp Ser Gly Phe Thr Gly Thr Tyr Cys His Glu Asn Ile Asp Asp Cys
 625 630 635 640
 Leu Gly Gln Pro Cys Arg Asn Gly Gly Thr Cys Ile Asp Glu Val Asp
 645 650 655
 Ala Phe Arg Cys Phe Cys Pro Ser Gly Trp Glu Gly Glu Leu Cys Asp
 660 665 670
 Thr Asn Pro Asn Asp Cys Leu Pro Asp Pro Cys His Ser Arg Gly Arg
 675 680 685

5189-2.ST25.txt

Cys Tyr Asp Leu Val Asn Asp Phe Tyr Cys Ala Cys Asp Asp Gly Trp
 690 695 700
 Lys Gly Lys Thr Cys His Ser Arg Glu Phe Gln Cys Asp Ala Tyr Thr
 705 710 715 720
 Cys Ser Asn Gly Gly Thr Cys Tyr Asp Ser Gly Asp Thr Phe Arg Cys
 725 730 735
 Ala Cys Pro Pro Gly Trp Lys Gly Ser Thr Cys Ala Val Ala Lys Asn
 740 745 750
 Ser Ser Cys Leu Pro Asn Pro Cys Val Asn Gly Gly Thr Cys Val Gly
 755 760 765
 Ser Gly Ala Ser Phe Ser Cys Ile Cys Arg Asp Gly Trp Glu Gly Arg
 770 775 780
 Thr Cys Thr His Asn Thr Asn Asp Cys Asn Pro Leu Pro Cys Tyr Asn
 785 790 795 800
 Gly Gly Ile Cys Val Asp Gly Val Asn Trp Phe Arg Cys Glu Cys Ala
 805 810 815
 Pro Gly Phe Ala Gly Pro Asp Cys Arg Ile Asn Ile Asp Glu Cys Gln
 820 825 830
 Ser Ser Pro Cys Ala Tyr Gly Ala Thr Cys Val Asp Glu Ile Asn Gly
 835 840 845
 Tyr Arg Cys Ser Cys Pro Pro Gly Arg Ala Gly Pro Arg Cys Gln Glu
 850 855 860
 Val Ile Gly Phe Gly Arg Ser Cys Trp Ser Arg Gly Thr Pro Phe Pro
 865 870 875 880
 His Gly Ser Ser Trp Val Glu Asp Cys Asn Ser Cys Arg Cys Leu Asp
 885 890 895
 Gly Arg Arg Asp Cys Ser Lys Val Trp Cys Gly Trp Lys Pro Cys Leu
 900 905 910
 Leu Ala Gly Gln Pro Glu Ala Leu Ser Ala Gln Cys Pro Leu Gly Gln
 915 920 925
 Arg Cys Leu Glu Lys Ala Pro Gly Gln Cys Leu Arg Pro Pro Cys Glu
 930 935 940

5189-2.ST25.txt

Ala Trp Gly Glu Cys Gly Ala Glu Glu Pro Pro Ser Thr Pro Cys Leu
945 950 955 960

Pro Arg Ser Gly His Leu Asp Asn Asn Cys Ala Arg Leu Thr Leu His
965 970 975

Phe Asn Arg Asp His Val Pro Gln Gly Thr Thr Val Gly Ala Ile Cys
980 985 990

Ser Gly Ile Arg Ser Leu Pro Ala Thr Arg Ala Val Ala Arg Asp Arg
995 1000 1005

Leu Leu Val Leu Leu Cys Asp Arg Ala Ser Ser Gly Ala Ser Ala
1010 1015 1020

Val Glu Val Ala Val Ser Phe Ser Pro Ala Arg Asp Leu Pro Asp
1025 1030 1035

Ser Ser Leu Ile Gln Gly Ala Ala His Ala Ile Val Ala Ala Ile
1040 1045 1050

Thr Gln Arg Gly Asn Ser Ser Leu Leu Leu Ala Val Thr Glu Val
1055 1060 1065

Lys Val Glu Thr Val Val Thr Gly Gly Ser Ser Thr Gly Leu Leu
1070 1075 1080

Val Pro Val Leu Cys Gly Ala Phe Ser Val Leu Trp Leu Ala Cys
1085 1090 1095

Val Val Leu Cys Val Trp Trp Thr Arg Lys Arg Arg Lys Glu Arg
1100 1105 1110

Glu Arg Ser Arg Leu Pro Arg Glu Glu Ser Ala Asn Asn Gln Trp
1115 1120 1125

Ala Pro Leu Asn Pro Ile Arg Asn Pro Ile Glu Arg Pro Gly Gly
1130 1135 1140

His Lys Asp Val Leu Tyr Gln Cys Lys Asn Phe Thr Pro Pro Pro
1145 1150 1155

Arg Arg Ala Asp Glu Ala Leu Pro Gly Pro Ala Gly His Ala Ala
1160 1165 1170

Val Arg Glu Asp Glu Glu Asp Glu Asp Leu Gly Arg Gly Glu Glu
1175 1180 1185

5189-2.ST25.txt

Asp Ser Leu Glu Ala Glu Lys Phe Leu Ser His Lys Phe Thr Lys
1190 1195 1200

Asp Pro Gly Arg Ser Pro Gly Arg Pro Ala His Trp Ala Ser Gly
1205 1210 1215

Pro Lys Val Asp Asn Arg Ala Val Arg Ser Ile Asn Glu Ala Arg
1220 1225 1230

Tyr Ala Gly Lys Glu
1235

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<211> 634
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (3)..(371)
<223>

<400> 39
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Arg Ala Ala Leu Arg Arg Leu Ala Val Ala Thr Arg Thr Met Ala
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gga gcg ccc acg gtc tcg ctt cct gaa ctc cgt tca ctc cta gcc tcc 95
Gly Ala Pro Thr Val Ser Leu Pro Glu Leu Arg Ser Leu Leu Ala Ser
20 25 30
gga cgg gcc cgg ctc ttc gac gtg cgc tct cgc gag gag gcg gca gct 143
Gly Arg Ala Arg Leu Phe Asp Val Arg Ser Arg Glu Glu Ala Ala Ala
35 40 45
ggg acc atc cca ggg gcg ctc aac atc ccg gtg tcc gag ttg gag agt 191
Gly Thr Ile Pro Gly Ala Leu Asn Ile Pro Val Ser Glu Leu Glu Ser
50 55 60
gct ctg cag atg gag cca gct gcc ttc cag gct tta tat tct gct gag 239
Ala Leu Gln Met Glu Pro Ala Ala Phe Gln Ala Leu Tyr Ser Ala Glu
65 70 75
aag cca aag ctg gaa gat gag cat ctc gtt ttc ttc tgt cag atg ggc 287
Lys Pro Lys Leu Glu Asp Glu His Leu Val Phe Phe Cys Gln Met Gly
80 85 90 95
aag cgg ggc ctc cag gcc acg cag ctg gcc cgg agt ctt gga tac act 335
Lys Arg Gly Leu Gln Ala Thr Gln Leu Ala Arg Ser Leu Gly Tyr Thr
100 105 110
ggg tac ggg gag gtg tgg ctg cta gct ggg agg tga tggggactgc 381
Gly Tyr Gly Glu Val Trp Leu Leu Ala Gly Arg
115 120
ctgtcattcc tgtcagtctc tcacgcttct ttgtctccac agggctcgca actacgctgg 441
agcctataga gaatggttgg agaaagagag ttaggcagga ggcagcttac tgattgccac 501
cccctggccc cttaatggcc accttaacta aggggtgtgaa cgggctgact tggatgaattg 561

5189-2.ST25.txt

ggcaactcct tatagtgttg tgcacacaaa agcatcaaat aaagaacatt taatcaaaaa 621
 aaaaaaaaaa aaa 634

<210> 40
 <211> 122
 <212> PRT
 <213> Homo sapiens
 <400> 40

Arg Ala Ala Leu Arg Arg Leu Ala Val Ala Thr Arg Thr Met Ala Gly
 1 5 10 15

Ala Pro Thr Val Ser Leu Pro Glu Leu Arg Ser Leu Leu Ala Ser Gly
 20 25 30

Arg Ala Arg Leu Phe Asp Val Arg Ser Arg Glu Glu Ala Ala Ala Gly
 35 40 45

Thr Ile Pro Gly Ala Leu Asn Ile Pro Val Ser Glu Leu Glu Ser Ala
 50 55 60

Leu Gln Met Glu Pro Ala Ala Phe Gln Ala Leu Tyr Ser Ala Glu Lys
 65 70 75 80

Pro Lys Leu Glu Asp Glu His Leu Val Phe Phe Cys Gln Met Gly Lys
 85 90 95

Arg Gly Leu Gln Ala Thr Gln Leu Ala Arg Ser Leu Gly Tyr Thr Gly
 100 105 110

Tyr Gly Glu Val Trp Leu Leu Ala Gly Arg
 115 120

<210> 41
 <211> 2254
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (180)..(1937)
 <223>

<400> 41
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 tgggagaggg ttctgggtca aaggaccagt ctgcagaggg atcctgtggc tggaagcgag 120
 gaggctccac acggccgttg cagctaccgc agccaggatc tgggcatcca ggcacggcc 179
 atg acc cct ccg agg ctc ttc tgg gtg tgg ctg ctg gtt gca gga acc 227
 Met Thr Pro Pro Arg Leu Phe Trp Val Trp Leu Leu Val Ala Gly Thr
 1 5 10 15

5189-2.ST25.txt

caa ggc gtg aac gat ggt gac atg cgg ctg gcc gat ggg ggc gcc acc Gln Gly Val Asn Asp Gly Asp Met Arg Leu Ala Asp Gly Gly Ala Thr 20 25 30	275
aac cag ggc cgc gtg gag atc ttc tac aga ggc cag tgg ggc act gtg Asn Gln Gly Arg Val Glu Ile Phe Tyr Arg Gly Gln Trp Gly Thr Val 35 40 45	323
tgt gac aac ctg tgg gac ctg act gat gcc agc gtc gtc tgc cgg gcc Cys Asp Asn Leu Trp Asp Leu Thr Asp Ala Ser Val Val Cys Arg Ala 50 55 60	371
ctg ggc ttc gag aac gcc acc cag gct ctg ggc aga gct gcc ttc ggg Leu Gly Phe Glu Asn Ala Thr Gln Ala Leu Gly Arg Ala Ala Phe Gly 65 70 75 80	419
caa gga tca ggc ccc atc atg ctg gac gag gtc cag tgc acg gga acc Gln Gly Ser Gly Pro Ile Met Leu Asp Glu Val Gln Cys Thr Gly Thr 85 90 95	467
gag gcc tca ctg gcc gac tgc aag tcc ctg ggc tgg ctg aag agc aac Glu Ala Ser Leu Ala Asp Cys Lys Ser Ser Leu Gly Trp Leu Lys Ser Asn 100 105 110	515
tgc agg cac gag aga gac gct ggt gtg gtc tgc acc aat gaa acc agg Cys Arg His Glu Arg Asp Ala Gly Val Val Cys Thr Asn Glu Thr Arg 115 120 125	563
agc acc cac acc ctg gac ctc tcc agg gag ctc tcg gag gcc ctt ggc Ser Thr His Thr Leu Asp Leu Ser Arg Glu Leu Ser Glu Ala Leu Gly 130 135 140	611
cag atc ttt gac agc cag cgg ggc tgc gac ctg tcc atc agc gtg aat Gln Ile Phe Asp Ser Gln Arg Gly Cys Asp Leu Ser Ile Ser Val Asn 145 150 155 160	659
gtg cag ggc gag gac gcc ctg ggc ttc tgt ggc cac acg gtc atc ctg Val Gln Gly Glu Asp Ala Leu Gly Phe Cys Gly His Thr Val Ile Leu 165 170 175	707
act gcc aac ctg gag gcc cag gcc ctg tgg aag gag ccg ggc agc aat Thr Ala Asn Leu Glu Ala Gln Ala Leu Trp Lys Glu Pro Gly Ser Asn 180 185 190	755
gtc acc atg agt gtg gat gct gag tgt gtg ccc atg gtc agg gac ctt Val Thr Met Ser Val Asp Ala Glu Cys Val Pro Met Val Arg Asp Leu 195 200 205	803
ctc agg tac ttc tac tcc cga agg att gac atc acc ctg tcg tca gtc Leu Arg Tyr Phe Tyr Ser Arg Arg Ile Asp Ile Thr Leu Ser Ser Val 210 215 220	851
aag tgc ttc cac aag ctg gcc tct gcc tat ggg gcc agg cag ctg cag Lys Cys Phe His Lys Leu Ala Ser Ala Tyr Gly Ala Arg Gln Leu Gln 225 230 235 240	899
ggc tac tgc gca agc ctc ttt gcc atc ctc ctc ccc cag gac ccc tcg Gly Tyr Cys Ala Ser Leu Phe Ala Ile Leu Leu Pro Gln Asp Pro Ser 245 250 255	947
ttc cag atg ccc ctg gac ctg tat gcc tat gca gtg gcc aca ggg gac Phe Gln Met Pro Leu Asp Leu Tyr Ala Tyr Ala Val Ala Thr Gly Asp 260 265 270	995

5189-2.ST25.txt

gcc ctg ctg gag aag ctc tgc cta cag ttc ctg gcc tgg aac ttc gag Ala Leu Leu Glu Lys Leu Cys Leu Gln Phe Leu Ala Trp Asn Phe Glu 275 280 285	1043
gcc ttg acg cag gcc gag gcc tgg ccc agt gtc ccc aca gac ctg ctc Ala Leu Thr Gln Ala Glu Ala Trp Pro Ser Val Pro Thr Asp Leu Leu 290 295 300	1091
caa ctg ctg ctg ccc agg agc gac ctg gcg gtg ccc agc gag ctg gcc Gln Leu Leu Leu Pro Arg Ser Asp Leu Ala Val Pro Ser Glu Leu Ala 305 310 315 320	1139
cta ctg aag gcc gtg gac acc tgg agc tgg ggg gag cgt gcc tcc cat Leu Leu Lys Ala Val Asp Thr Trp Ser Trp Gly Glu Arg Ala Ser His 325 330 335	1187
gag gag gtg gag ggc ttg gtg gag aag atc cgc ttc ccc atg atg ctc Glu Glu Val Glu Gly Leu Val Glu Lys Ile Arg Phe Pro Met Met Leu 340 345 350	1235
cct gag gag ctc ttt gag ctg cag ttc aac ctg tcc ctg tac tgg agc Pro Glu Glu Leu Phe Glu Leu Gln Phe Asn Leu Ser Leu Tyr Trp Ser 355 360 365	1283
cac gag gcc ctg ttc cag aag aag act ctg cag gcc ctg gaa ttc cac His Glu Ala Leu Phe Gln Lys Lys Thr Leu Gln Ala Leu Glu Phe His 370 375 380	1331
act gtg ccc ttc cag ttg ctg gcc cgg tac aaa ggc ctg aac ctc acc Thr Val Pro Phe Gln Leu Leu Ala Arg Tyr Lys Gly Leu Asn Leu Thr 385 390 395 400	1379
gag gat acc tac aag ccc cgg att tac acc tcg ccc acc tgg agt gcc Glu Asp Thr Tyr Lys Pro Arg Ile Tyr Thr Ser Pro Thr Trp Ser Ala 405 410 415	1427
ttt gtg aca gac agt tcc tgg agt gca cgg aag tca caa ctg gtc tat Phe Val Thr Asp Ser Ser Trp Ser Ala Arg Lys Ser Gln Leu Val Tyr 420 425 430	1475
cag tcc aga cgg ggg cct ttg gtc aaa tat tct tct gat tac ttc caa Gln Ser Arg Arg Gly Pro Leu Val Lys Tyr Ser Ser Asp Tyr Phe Gln 435 440 445	1523
gcc ccc tct gac tac aga tac tac ccc tac cag tcc ttc cag act cca Ala Pro Ser Asp Tyr Arg Tyr Tyr Pro Tyr Gln Ser Phe Gln Thr Pro 450 455 460	1571
caa cac ccc agc ttc ctc ttc cag gac aag agg gtg tcc tgg tcc ctg Gln His Pro Ser Phe Leu Phe Gln Asp Lys Arg Val Ser Trp Ser Leu 465 470 475 480	1619
gtc tac ctc ccc acc atc cag agc tgc tgg aac tac ggc ttc tcc tgc Val Tyr Leu Pro Thr Ile Gln Ser Cys Trp Asn Tyr Gly Phe Ser Cys 485 490 495	1667
tcc tcg gac gag ctc cct gtc ctg ggc ctc acc aag tct ggc ggc tca Ser Ser Asp Glu Leu Pro Val Leu Gly Leu Thr Lys Ser Gly Gly Ser 500 505 510	1715
gat cgc acc att gcc tac gaa aac aaa gcc ctg atg ctc tgc gaa ggg Asp Arg Thr Ile Ala Tyr Glu Asn Lys Ala Leu Met Leu Cys Glu Gly 515 520 525	1763

5189-2.ST25.txt

ctc ttc gtg gca gac gtc acc gat ttc gag ggc tgg aag gct gcg att 1811
 Leu Phe Val Ala Asp Val Thr Asp Phe Glu Gly Trp Lys Ala Ala Ile
 530 535 540

ccc agt gcc ctg gac acc aac agc tcg aag agc acc tcc tcc ttc ccc 1859
 Pro Ser Ala Leu Asp Thr Asn Ser Ser Lys Ser Thr Ser Ser Phe Pro
 545 550 555 560

tgc ccg gca ggg cac ttc aac ggc ttc cgc acg gtc atc cgc ccc ttc 1907
 Cys Pro Ala Gly His Phe Asn Gly Phe Arg Thr Val Ile Arg Pro Phe
 565 570 575

tac ctg acc aac tcc tca ggt gtg gac tag acgcgtggcc aagggtggtg 1957
 Tyr Leu Thr Asn Ser Ser Gly Val Asp 585

agaaccggag aaccccagga cgccctcact gcaggctccc ctccctcggt tccttcctct 2017
 ctgcaatgac cttcaacaac cggccaccag atgtcgccct actcacctga ggctcagctt 2077
 caagaaatta ctggaaggct tccactaggg tccaccagga gttctccac cacctcacca 2137
 gtttccaggt ggtaagcacc aggaggccct cgagggttgct ctggatcccc ccacagcccc 2197
 tggtcagtct gcccttgta ctggtctgag gtcattaaaa ttacattgag gttccta 2254

<210> 42
 <211> 585
 <212> PRT
 <213> Homo sapiens

<400> 42

Met Thr Pro Pro Arg Leu Phe Trp Val Trp Leu Leu Val Ala Gly Thr
 1 5 10 15

Gln Gly Val Asn Asp Gly Asp Met Arg Leu Ala Asp Gly Gly Ala Thr
 20 25 30

Asn Gln Gly Arg Val Glu Ile Phe Tyr Arg Gly Gln Trp Gly Thr Val
 35 40 45

Cys Asp Asn Leu Trp Asp Leu Thr Asp Ala Ser Val Val Cys Arg Ala
 50 55 60

Leu Gly Phe Glu Asn Ala Thr Gln Ala Leu Gly Arg Ala Ala Phe Gly
 65 70 75 80

Gln Gly Ser Gly Pro Ile Met Leu Asp Glu Val Gln Cys Thr Gly Thr
 85 90 95

Glu Ala Ser Leu Ala Asp Cys Lys Ser Leu Gly Trp Leu Lys Ser Asn
 100 105 110

Cys Arg His Glu Arg Asp Ala Gly Val Val Cys Thr Asn Glu Thr Arg
 115 120 125

5189-2.ST25.txt

Ser Thr His Thr Leu Asp Leu Ser Arg Glu Leu Ser Glu Ala Leu Gly
130 135 140

Gln Ile Phe Asp Ser Gln Arg Gly Cys Asp Leu Ser Ile Ser Val Asn
145 150 155 160

Val Gln Gly Glu Asp Ala Leu Gly Phe Cys Gly His Thr Val Ile Leu
165 170 175

Thr Ala Asn Leu Glu Ala Gln Ala Leu Trp Lys Glu Pro Gly Ser Asn
180 185 190

Val Thr Met Ser Val Asp Ala Glu Cys Val Pro Met Val Arg Asp Leu
195 200 205

Leu Arg Tyr Phe Tyr Ser Arg Arg Ile Asp Ile Thr Leu Ser Ser Val
210 215 220

Lys Cys Phe His Lys Leu Ala Ser Ala Tyr Gly Ala Arg Gln Leu Gln
225 230 235 240

Gly Tyr Cys Ala Ser Leu Phe Ala Ile Leu Leu Pro Gln Asp Pro Ser
245 250 255

Phe Gln Met Pro Leu Asp Leu Tyr Ala Tyr Ala Val Ala Thr Gly Asp
260 265 270

Ala Leu Leu Glu Lys Leu Cys Leu Gln Phe Leu Ala Trp Asn Phe Glu
275 280 285

Ala Leu Thr Gln Ala Glu Ala Trp Pro Ser Val Pro Thr Asp Leu Leu
290 295 300

Gln Leu Leu Leu Pro Arg Ser Asp Leu Ala Val Pro Ser Glu Leu Ala
305 310 315 320

Leu Leu Lys Ala Val Asp Thr Trp Ser Trp Gly Glu Arg Ala Ser His
325 330 335

Glu Glu Val Glu Gly Leu Val Glu Lys Ile Arg Phe Pro Met Met Leu
340 345 350

Pro Glu Glu Leu Phe Glu Leu Gln Phe Asn Leu Ser Leu Tyr Trp Ser
355 360 365

His Glu Ala Leu Phe Gln Lys Lys Thr Leu Gln Ala Leu Glu Phe His
370 375 380

5189-2.ST25.txt

Thr Val Pro Phe Gln Leu Leu Ala Arg Tyr Lys Gly Leu Asn Leu Thr
385 390 395 400

Glu Asp Thr Tyr Lys Pro Arg Ile Tyr Thr Ser Pro Thr Trp Ser Ala
405 410 415

Phe Val Thr Asp Ser Ser Trp Ser Ala Arg Lys Ser Gln Leu Val Tyr
420 425 430

Gln Ser Arg Arg Gly Pro Leu Val Lys Tyr Ser Ser Asp Tyr Phe Gln
435 440 445

Ala Pro Ser Asp Tyr Arg Tyr Tyr Pro Tyr Gln Ser Phe Gln Thr Pro
450 455 460

Gln His Pro Ser Phe Leu Phe Gln Asp Lys Arg Val Ser Trp Ser Leu
465 470 475 480

Val Tyr Leu Pro Thr Ile Gln Ser Cys Trp Asn Tyr Gly Phe Ser Cys
485 490 495

Ser Ser Asp Glu Leu Pro Val Leu Gly Leu Thr Lys Ser Gly Gly Ser
500 505 510

Asp Arg Thr Ile Ala Tyr Glu Asn Lys Ala Leu Met Leu Cys Glu Gly
515 520 525

Leu Phe Val Ala Asp Val Thr Asp Phe Glu Gly Trp Lys Ala Ala Ile
530 535 540

Pro Ser Ala Leu Asp Thr Asn Ser Ser Lys Ser Thr Ser Ser Phe Pro
545 550 555 560

Cys Pro Ala Gly His Phe Asn Gly Phe Arg Thr Val Ile Arg Pro Phe
565 570 575

Tyr Leu Thr Asn Ser Ser Gly Val Asp
580 585

<210> 43
<211> 1185
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (283)..(1131)
<223>

<400> 43
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60

5189-2.ST25.txt

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aaggagctct acaacgtgct gcctgggtggc gagaaggagt tcgtgaacct gcagggtttt	180
gccgccagag gcttcgaggg cttctgcctg gttggcgtct ccgacctgga catctgtgag	240
ttcattgaca actatgcgct ctccaagaag ggtgtcaaag cc atg agc ctc aag	294
Met Ser Leu Lys	
1	
cgc tcc acc atc acg gac gca ggc ctc gag gtt atg ctt gaa cag atg	342
Arg Ser Thr Ile Thr Asp Ala Gly Leu Glu Val Met Leu Glu Gln Met	
5 10 15 20	
cag ggc gtg gtg cgt ctg gag ctg tcg ggc tgc aac gac ttc acc gag	390
Gln Gly Val Val Arg Leu Glu Leu Ser Gly Cys Asn Asp Phe Thr Glu	
25 30 35	
gcc ggg ctg tgg tcc agc ctg agc gcg cgc atc acc tcg ctg agc gtg	438
Ala Gly Leu Trp Ser Ser Leu Ser Ala Arg Ile Thr Ser Leu Ser Val	
40 45 50	
agt gac tgc atc aac gtg gcc gac gac gcc atc gcg gcc atc tcg cag	486
Ser Asp Cys Ile Asn Val Ala Asp Asp Ala Ile Ala Ala Ile Ser Gln	
55 60 65	
ctg ctg ccc aac ctg gcg gag ctg agc ctg cag gcc tac cac gtg acg	534
Leu Leu Pro Asn Leu Ala Glu Leu Ser Leu Gln Ala Tyr His Val Thr	
70 75 80	
gac acg gcg ctg gcc tac ttc acg gcg cgc cag gcc cac agc acg cac	582
Asp Thr Ala Leu Ala Tyr Phe Thr Ala Arg Gln Gly His Ser Thr His	
85 90 95 100	
acg ctg cgc ctg ctc tcc tgc tgg gag atc acc aac cac gcc gtg gtc	630
Thr Leu Arg Leu Leu Ser Cys Trp Glu Ile Thr Asn His Gly Val Val	
105 110 115	
aac gtg gtg cac agc ctg ccc aac ctc acc gcg ctc agc ctc tcg gcc	678
Asn Val Val His Ser Leu Pro Asn Leu Thr Ala Leu Ser Leu Ser Gly	
120 125 130	
tgc tcc aag gtc acc gac gac ggc gtg gag ctc gtg gcc gag aac ctg	726
Cys Ser Lys Val Thr Asp Asp Gly Val Glu Leu Val Ala Glu Asn Leu	
135 140 145	
cgc aag ctg cgc agc ctt gac ctc tcg tgg tgc cca cgc atc acc gac	774
Arg Lys Leu Arg Ser Leu Asp Leu Ser Trp Cys Pro Arg Ile Thr Asp	
150 155 160	
atg gcg ctg gag tac gtg gcc tgc gac ctg cac cgc cta gag gag ctc	822
Met Ala Leu Glu Tyr Val Ala Cys Asp Leu His Arg Leu Glu Glu Leu	
165 170 175 180	
gtg ctc gac agg tgt gta cgc atc acg gac act gcc ctc agc tat ctg	870
Val Leu Asp Arg Cys Val Arg Ile Thr Asp Thr Gly Leu Ser Tyr Leu	
185 190 195	
tcc acc atg tcg tcc ctc cgc agc ctc tac ctg cga tgg tgc tgc cag	918
Ser Thr Met Ser Ser Leu Arg Ser Leu Tyr Leu Arg Trp Cys Cys Gln	
200 205 210	
gtg caa gac ttc ggg ctg aag cac ctc ctg gcc ctg ggg agt ttg cgc	966
Val Gln Asp Phe Gly Leu Lys His Leu Leu Ala Leu Gly Ser Leu Arg	

5189-2.ST25.txt

215 220 225
 ctc ctg tct ctg gca ggc tgc ccg ctg ctc acc acc acc ggg ctg tcg 1014
 Leu Leu Ser Leu Ala Gly Cys Pro Leu Leu Thr Thr Gly Leu Ser
 230 235 240
 ggc ctg gtg cag ctg cag gag ctg gag gag ctg gag ctg acc aac tgc 1062
 Gly Leu Val Gln Leu Gln Glu Leu Glu Glu Leu Glu Leu Thr Asn Cys
 245 250 255 260
 ccc ggg gcc acc ccc gag ctc ttc aag tat ttc tcg cag cac ctg ccc 1110
 Pro Gly Ala Thr Pro Glu Leu Phe Lys Tyr Phe Ser Gln His Leu Pro
 265 270 275
 cgc tgc ctc gtc att gag tag cgcgaggccc ccgccccggt cgcgggaacc 1161
 Arg Cys Leu Val Ile Glu
 280
 cgcccatgac ctgggcgggg gcgc 1185

 <210> 44
 <211> 282
 <212> PRT
 <213> Homo sapiens

 <400> 44
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 Leu Glu Gln Met Gln Gly Val Val Arg Leu Glu Leu Ser Gly Cys Asn
 20 25 30
 Asp Phe Thr Glu Ala Gly Leu Trp Ser Ser Leu Ser Ala Arg Ile Thr
 35 40 45
 Ser Leu Ser Val Ser Asp Cys Ile Asn Val Ala Asp Asp Ala Ile Ala
 50 55 60
 Ala Ile Ser Gln Leu Leu Pro Asn Leu Ala Glu Leu Ser Leu Gln Ala
 65 70 75 80
 Tyr His Val Thr Asp Thr Ala Leu Ala Tyr Phe Thr Ala Arg Gln Gly
 85 90 95
 His Ser Thr His Thr Leu Arg Leu Leu Ser Cys Trp Glu Ile Thr Asn
 100 105 110
 His Gly Val Val Asn Val Val His Ser Leu Pro Asn Leu Thr Ala Leu
 115 120 125
 Ser Leu Ser Gly Cys Ser Lys Val Thr Asp Asp Gly Val Glu Leu Val
 130 135 140

5189-2.ST25.txt

Ala Glu Asn Leu Arg Lys Leu Arg Ser Leu Asp Leu Ser Trp Cys Pro
145 150 155 160

Arg Ile Thr Asp Met Ala Leu Glu Tyr Val Ala Cys Asp Leu His Arg
165 170 175

Leu Glu Glu Leu Val Leu Asp Arg Cys Val Arg Ile Thr Asp Thr Gly
180 185 190

Leu Ser Tyr Leu Ser Thr Met Ser Ser Leu Arg Ser Leu Tyr Leu Arg
195 200 205

Trp Cys Cys Gln Val Gln Asp Phe Gly Leu Lys His Leu Leu Ala Leu
210 215 220

Gly Ser Leu Arg Leu Leu Ser Leu Ala Gly Cys Pro Leu Leu Thr Thr
225 230 235 240

Thr Gly Leu Ser Gly Leu Val Gln Leu Gln Glu Leu Glu Glu Leu Glu
245 250 255

Leu Thr Asn Cys Pro Gly Ala Thr Pro Glu Leu Phe Lys Tyr Phe Ser
260 265 270

Gln His Leu Pro Arg Cys Leu Val Ile Glu
275 280

<210> 45
<211> 1780
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (190)..(987)
<223>

<400> 45
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ctgggggtga cattgcaccg cgccccctcg ggggtcgcgt tgccacccca cgcggactcc 120
ccagctggcg cgccccctccc atttgccctgt cctggtcagg cccccacccc ccttcccacc 180
tgaccagcc atg ggg gct gcg gtg ttt ttc ggc tgc act ttc gtc gcg ttc 231
Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe
1 5 10
ggc ccg gcc ttc gcg ctt ttc ttg atc act gtg gct ggg gac ccg ctt 279
Gly Pro Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu
15 20 25 30
cgc gtt atc atc ctg gtc gca ggg gca ttt ttc tgg ctg gtc tcc ctg 327
Arg Val Ile Ile Leu Val Ala Gly Ala Phe Thr Trp Leu Val Ser Leu
35 40 45

5189-2.ST25.txt

ctc ctg gcc tct gtg gtc tgg ttc atc ttg gtc cat gtg acc gac cgg Leu Leu Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg 50 55 60	375
tca gat gcc cgg ctc cag tac ggc ctc ctg att ttt ggt gct gct gtc Ser Asp Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val 65 70 75	423
tct gtc ctt cta cag gag gtg ttc cgc ttt gcc tac tac aag ctg ctt Ser Val Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu 80 85 90	471
aag aag gca gat gag ggg tta gca tcg ctg agt gag gac gga aga tca Lys Lys Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser 95 100 105 110	519
ccc atc tcc atc cgc cag atg gcc tat gtt tct ggt ctc tcc ttc ggt Pro Ile Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly 115 120 125	567
atc atc agt ggt gtc ttc tct gtt atc aat att ttg gct gat gca ctt Ile Ile Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu 130 135 140	615
ggg cca ggt gtg gtt ggg atc cat gga gac tca ccc tat tac ttc ctg Gly Pro Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu 145 150 155	663
act tca gcc ttt ctg aca gca gcc att atc ctg ctc cat acc ttt tgg Thr Ser Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp 160 165 170	711
gga gtt gtg ttc ttt gat gcc tgt gag agg aga cgg tac tgg gct ttg Gly Val Val Phe Phe Asp Ala Cys Glu Arg Arg Tyr Trp Ala Leu 175 180 185 190	759
ggc ctg gtg gtt ggg agt cac cta ctg aca tcg gga ctg aca ttc ctg Gly Leu Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu 195 200 205	807
aac ccc tgg tat gag gcc agc ctg ctg ccc atc tat gca gtc act gtt Asn Pro Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val 210 215 220	855
tcc atg ggg ctc tgg gcc ttc atc aca gct gga ggg tcc ctc cga agt Ser Met Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser 225 230 235	903
att cag cgc agc ctc ttg tgc cga cgg cag gag gac agt cgg gtg atg Ile Gln Arg Ser Leu Leu Cys Arg Arg Gln Glu Asp Ser Arg Val Met 240 245 250	951
gtg tat tct gcc ctg cgc atc cca ccc gag gac tga gggaacctag Val Tyr Ser Ala Leu Arg Ile Pro Pro Glu Asp 255 260 265	997
gggggacccc tgggcctggg gtgccctcct gatgtcctcg ccctgtatatt ctccatctcc	1057
agttctggac agtgcagggtt gccaagaaaa gggacctagt ttagccattg ccctggagat	1117
gaaattaatg gaggctcaag gatagatgag ctctgagttt ctcaagtactc cctcaagact	1177
ggacatcttg gtctttttct caggcctgag ggggaaccat ttttggtgtg ataaataccc	1237

5189-2.ST25.txt

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taaactgcct ttttttcttt tttgaggtgg ggggagggag gaggtatatt ggaactcttc 1297
taacctcctt gggctatatatt ttctctcctc gagttgctcc tcatggctgg gctcatttcg 1357
gtccctttct ccttggtccc agaccttggg ggaaaggaag gaagtgcattg tttgggaact 1417
ggcattactg gaactaatgg ttttaacctc ctttaaccacc agcatccctc ctctcccca 1477
ggtgaagtgg aggggtgctgt ggtgagctgg ccactccaga gctgcagtgc cactggagga 1537
gtcagactac catgacatcg tagggaagga ggggagattt tttttagtatt ttttaattggg 1597
gtgtggggagg ggcggggagg ttttctataa actgtatcat tttctgctga ggggtggagt 1657
tcccatcctt ttaatcaagg tgattgtgat tttgactaat aaaaaagaat ttgtaaaaaa 1717
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1777
aaa 1780

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<210> 46
<211> 265
<212> PRT
<213> Homo sapiens

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<400> 46
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Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro
1          5          10          15

```

```

Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val
          20          25          30

```

```

Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu
          35          40          45

```

```

Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp
          50          55          60

```

```

Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val
65          70          75          80

```

```

Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys
          85          90          95

```

```

Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile
          100          105          110

```

```

Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile
          115          120          125

```

```

Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro
          130          135          140

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5189-2.ST25.txt

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser
145 150 155 160

Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val
165 170 175

Val Phe Phe Asp Ala Cys Glu Arg Arg Arg Tyr Trp Ala Leu Gly Leu
180 185 190

Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro
195 200 205

Trp Tyr Glu Ala Ser Leu Leu Pro Ile Tyr Ala Val Thr Val Ser Met
210 215 220

Gly Leu Trp Ala Phe Ile Thr Ala Gly Gly Ser Leu Arg Ser Ile Gln
225 230 235 240

Arg Ser Leu Leu Cys Arg Arg Gln Glu Asp Ser Arg Val Met Val Tyr
245 250 255

Ser Ala Leu Arg Ile Pro Pro Glu Asp
260 265

<210> 47
<211> 3549
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (175)..(1602)
<223>

<400> 47
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cggctcatca gtcggtccgc gccttgagc tctccagag ggacgcgccc cgag atg 177
Met
1
gag agc aaa gcc ctg ctc gtg ctg act ctg gcc gtg tgg ctc cag agt 225
Glu Ser Lys Ala Leu Leu Val Leu Thr Leu Ala Val Trp Leu Gln Ser
5 10 15
ctg acc gcc tcc cgc gga ggg gtg gcc gcc gcc gac caa aga aga gat 273
Leu Thr Ala Ser Arg Gly Gly Val Ala Ala Ala Asp Gln Arg Arg Asp
20 25 30
ttt atc gac atc gaa agt aaa ttt gcc cta agg acc cct gaa gac aca 321
Phe Ile Asp Ile Glu Ser Lys Phe Ala Leu Arg Thr Pro Glu Asp Thr
35 40 45
gct gag gac act tgc cac ctc att ccc gga gta gca gag tcc gtg gct 369

5189-2.ST25.txt

Ala 50	Glu	Asp	Thr	Cys	His 55	Leu	Ile	Pro	Gly	Val 60	Ala	Glu	Ser	Val	Ala 65	
acc Thr	tgt Cys	cat His	ttc Phe	aat Asn 70	cac His	agc Ser	agc Ser	aaa Lys	acc Thr 75	ttc Phe	atg Met	gtg Val	atc Ile	cat His 80	ggc Gly	417
tgg Trp	acg Thr	gta Val	aca Thr 85	gga Gly	atg Met	tat Tyr	gag Glu 90	agt Ser	tgg Trp	gtg Val	cca Pro	aaa Lys	ctt Leu 95	gtg Val	gcc Ala	465
gcc Ala	ctg Leu	tac Tyr 100	aag Lys	aga Arg	gaa Glu	cca Pro	gac Asp 105	tcc Ser	aat Asn	gtc Val	att Ile	gtg Val 110	gtg Val	gac Asp	tgg Trp	513
ctg Leu	tca Ser 115	cgg Arg	gct Ala	cag Gln	gag Glu	cat His 120	tac Tyr	cca Pro	gtg Val	tcc Ser	gcg Ala 125	ggc Gly	tac Tyr	acc Thr	aaa Lys	561
ctg Leu 130	gtg Val	gga Gly	cag Gln	gat Asp	gtg Val 135	gcc Ala	cgg Arg	ttt Phe	atc Ile 140	aac Asn	tgg Trp	atg Met	gag Glu	gag Glu	gag Glu 145	609
ttt Phe	aac Asn	tac Tyr	cct Pro	ctg Leu 150	gac Asp	aat Asn	gtc Val	cat His	ctc Leu 155	ttg Leu	gga Gly	tac Tyr	agc Ser	ctt Leu 160	gga Gly	657
gcc Ala	cat His	gct Ala 165	gct Ala	ggc Gly	att Ile	gca Ala	gga Gly	agt Ser 170	ctg Leu	acc Thr	aat Asn	aag Lys	aaa Lys 175	gtc Val	aac Asn	705
aga Arg	att Ile	act Thr 180	ggc Gly	ctc Leu	gat Asp	cca Pro	gct Ala 185	gga Gly	cct Pro	aac Asn	ttt Phe	gag Glu 190	tat Tyr	gca Ala	gaa Glu	753
gcc Ala 195	ccg Pro	agt Ser	cgt Arg	ctt Leu	tct Ser	cct Pro 200	gat Asp	gat Asp	gca Ala	gat Asp	ttt Phe 205	gta Val	gac Asp	gtc Val	tta Leu	801
cac His 210	aca Thr	ttc Phe	acc Thr	aga Arg	ggg Gly 215	tcc Ser	cct Pro	ggt Gly	cga Arg	agc Ser 220	att Ile	gga Gly	atc Ile	cag Gln	aaa Lys 225	849
cca Pro	gtt Val	ggg Gly	cat His 230	gtt Val	gac Asp	att Ile	tac Tyr	ccg Pro	aat Asn 235	gga Gly	ggt Gly	act Thr	ttt Phe	cag Gln 240	cca Pro	897
gga Gly	tgt Cys	aac Asn	att Ile 245	gga Gly	gaa Glu	gct Ala	atc Ile	cgc Arg 250	gtg Val	att Ile	gca Ala	gag Glu	aga Arg 255	gga Gly	ctt Leu	945
gga Gly	gat Asp	gtg Val 260	gac Asp	cag Gln	cta Leu	gtg Val 265	aag Lys	tgc Cys	tcc Ser	cac His	gag Glu	cgc Arg 270	tcc Ser	att Ile	cat His	993
ctc Leu	ttc Phe 275	atc Ile	gac Asp	tct Ser	ctg Leu	ttg Leu 280	aat Asn	gaa Glu	gaa Glu	aat Asn 285	cca Pro	agt Ser	aag Lys	gcc Ala	tac Tyr	1041
agg Arg 290	tgc Cys	agt Ser	tcc Ser	aag Lys	gaa Glu 295	gcc Ala	ttt Phe	gag Glu	aaa Lys	ggg Gly 300	ctc Leu	tgc Cys	ttg Leu	agt Ser	tgt Cys 305	1089
aga	aag	aac	cgc	tgc	aac	aat	ctg	ggc	tat	gag	atc	aat	aaa	gtc	aga	1137

5189-2.ST25.txt

Arg	Lys	Asn	Arg	Cys	Asn	Asn	Leu	Gly	Tyr	Glu	Ile	Asn	Lys	Val	Arg	
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gcc	aaa	aga	agc	agc	aaa	atg	tac	ctg	aag	act	cgt	tct	cag	atg	ccc	1185
Ala	Lys	Arg	Ser	Ser	Lys	Met	Tyr	Leu	Lys	Thr	Arg	Ser	Gln	Met	Pro	
			325					330					335			
tac	aaa	gtc	ttc	cat	tac	caa	gta	aag	att	cat	ttt	tct	ggg	act	gag	1233
Tyr	Lys	Val	Phe	His	Tyr	Gln	Val	Lys	Ile	His	Phe	Ser	Gly	Thr	Glu	
		340					345					350				
agt	gaa	acc	cat	acc	aat	cag	gcc	ttt	gag	att	tct	ctg	tat	ggc	acc	1281
Ser	Glu	Thr	His	Thr	Asn	Gln	Ala	Phe	Glu	Ile	Ser	Leu	Tyr	Gly	Thr	
	355					360					365					
gtg	gcc	gag	agt	gag	aac	atc	cca	ttc	act	ctg	cct	gaa	gtt	tcc	aca	1329
Val	Ala	Glu	Ser	Glu	Asn	Ile	Pro	Phe	Thr	Leu	Pro	Glu	Val	Ser	Thr	
	370				375					380					385	
aat	aag	acc	tac	tcc	ttc	cta	att	tac	aca	gag	gta	gat	att	gga	gaa	1377
Asn	Lys	Thr	Tyr	Ser	Phe	Leu	Ile	Tyr	Thr	Glu	Val	Asp	Ile	Gly	Glu	
				390					395					400		
cta	ctc	atg	ttg	aag	ctc	aaa	tgg	aag	agt	gat	tca	tac	ttt	agc	tgg	1425
Leu	Leu	Met	Leu	Lys	Leu	Lys	Trp	Lys	Ser	Asp	Ser	Tyr	Phe	Ser	Trp	
			405					410					415			
tca	gac	tgg	tgg	agc	agt	ccc	ggc	ttc	gcc	att	cag	aag	atc	aga	gta	1473
Ser	Asp	Trp	Trp	Ser	Ser	Pro	Gly	Phe	Ala	Ile	Gln	Lys	Ile	Arg	Val	
		420					425					430				
aaa	gca	gga	gag	act	cag	aaa	aag	gtg	atc	ttc	tgt	tct	agg	gag	aaa	1521
Lys	Ala	Gly	Glu	Thr	Gln	Lys	Lys	Val	Ile	Phe	Cys	Ser	Arg	Glu	Lys	
	435					440					445					
gtg	tct	cat	ttg	cag	aaa	gga	aag	gca	cct	gcg	gta	ttt	gtg	aaa	tgc	1569
Val	Ser	His	Leu	Gln	Lys	Gly	Lys	Ala	Pro	Ala	Val	Phe	Val	Lys	Cys	
	450				455					460					465	
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His	Asp	Lys	Ser	Leu	Asn	Lys	Lys	Ser	Gly							
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5189-2.ST25.txt

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Asp Phe Ile Asp Ile Glu Ser Lys Phe Ala Leu Arg Thr Pro Glu Asp
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5189-2.ST25.txt

Thr Ala Glu Asp Thr Cys His Leu Ile Pro Gly Val Ala Glu Ser Val
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85 90 95

Ala Ala Leu Tyr Lys Arg Glu Pro Asp Ser Asn Val Ile Val Val Asp
100 105 110

Trp Leu Ser Arg Ala Gln Glu His Tyr Pro Val Ser Ala Gly Tyr Thr
115 120 125

Lys Leu Val Gly Gln Asp Val Ala Arg Phe Ile Asn Trp Met Glu Glu
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Glu Phe Asn Tyr Pro Leu Asp Asn Val His Leu Leu Gly Tyr Ser Leu
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Gly Ala His Ala Ala Gly Ile Ala Gly Ser Leu Thr Asn Lys Lys Val
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Asn Arg Ile Thr Gly Leu Asp Pro Ala Gly Pro Asn Phe Glu Tyr Ala
180 185 190

Glu Ala Pro Ser Arg Leu Ser Pro Asp Asp Ala Asp Phe Val Asp Val
195 200 205

Leu His Thr Phe Thr Arg Gly Ser Pro Gly Arg Ser Ile Gly Ile Gln
210 215 220

Lys Pro Val Gly His Val Asp Ile Tyr Pro Asn Gly Gly Thr Phe Gln
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Pro Gly Cys Asn Ile Gly Glu Ala Ile Arg Val Ile Ala Glu Arg Gly
245 250 255

Leu Gly Asp Val Asp Gln Leu Val Lys Cys Ser His Glu Arg Ser Ile
260 265 270

His Leu Phe Ile Asp Ser Leu Leu Asn Glu Glu Asn Pro Ser Lys Ala
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Tyr Arg Cys Ser Ser Lys Glu Ala Phe Glu Lys Gly Leu Cys Leu Ser
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5189-2.ST25.txt

Cys Arg Lys Asn Arg Cys Asn Asn Leu Gly Tyr Glu Ile Asn Lys Val
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Arg Ala Lys Arg Ser Ser Lys Met Tyr Leu Lys Thr Arg Ser Gln Met
325 330 335

Pro Tyr Lys Val Phe His Tyr Gln Val Lys Ile His Phe Ser Gly Thr
340 345 350

Glu Ser Glu Thr His Thr Asn Gln Ala Phe Glu Ile Ser Leu Tyr Gly
355 360 365

Thr Val Ala Glu Ser Glu Asn Ile Pro Phe Thr Leu Pro Glu Val Ser
370 375 380

Thr Asn Lys Thr Tyr Ser Phe Leu Ile Tyr Thr Glu Val Asp Ile Gly
385 390 395 400

Glu Leu Leu Met Leu Lys Leu Lys Trp Lys Ser Asp Ser Tyr Phe Ser
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Trp Ser Asp Trp Trp Ser Ser Pro Gly Phe Ala Ile Gln Lys Ile Arg
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Val Lys Ala Gly Glu Thr Gln Lys Lys Val Ile Phe Cys Ser Arg Glu
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Ala Pro Pro Gly Pro Pro Trp Pro Leu Leu Leu Leu Leu Leu Leu
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5189-2.ST25.txt

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aag Lys	ctg Leu	gag Glu	tcc Ser 55	acc Thr	atc Ile	gtg Val	gtc Val	agc Ser 60	ggc Gly	ctg Leu	gag Glu	gat Asp	gcg Ala 65	gcc Ala	gca Ala	249
gtg Val	gac Asp	ttc Phe 70	cag Gln	ttt Phe	tcc Ser	aag Lys	gga Gly 75	gcc Ala	gtg Val	tac Tyr	tgg Trp	aca Thr 80	gac Asp	gtg Val	agc Ser	297
gag Glu	gag Glu 85	gcc Ala	atc Ile	aag Lys	cag Gln	acc Thr 90	tac Tyr	ctg Leu	aac Asn	cag Gln	acg Thr 95	ggg Gly	gcc Ala	gcc Ala	gtg Val	345
cag Gln 100	aac Asn	gtg Val	gtc Val	atc Ile	tcc Ser 105	ggc Gly	ctg Leu	gtc Val	tct Ser	ccc Pro 110	gac Asp	ggc Gly	ctc Leu	gcc Ala	tgc Cys 115	393
gac Asp	tgg Trp	gtg Val	ggc Gly	aag Lys 120	aag Lys	ctg Leu	tac Tyr	tgg Trp	acg Thr 125	gac Asp	tca Ser	gag Glu	acc Thr	aac Asn 130	cgc Arg	441
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tac Tyr 165	atg Met	tac Tyr	tgg Trp	aca Thr	gac Asp	tgg Trp 170	ggt Gly	gag Glu	acg Thr	ccc Pro	cgg Arg 175	att Ile	gag Glu	cgg Arg	gca Ala	585
ggg Gly 180	atg Met	gat Asp	ggc Gly	agc Ser	acc Thr 185	cgg Arg	aag Lys	atc Ile	att Ile	gtg Val 190	gac Asp	tcg Ser	gac Asp	att Ile	tac Tyr 195	633
tgg Trp	ccc Pro	aat Asn	gga Gly	ctg Leu 200	acc Thr	atc Ile	gac Asp	ctg Leu	gag Glu 205	gag Glu	cag Gln	aag Lys	ctc Leu	tac Tyr 210	tgg Trp	681
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5189-2.ST25.txt

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His	Leu	Cys	Leu	Leu	Ser	Pro	Ser	Glu	Pro	Phe	Tyr	Thr	Cys	Ala	Cys	
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Ile	Leu	Val	Ser	Glu	Asp	Leu	Asp	Glu	Pro	Arg	Ala	Ile	Ala	Leu	His	
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gcc	tcc	ctc	ggg	tgg	ccc	aac	ggc	ctg	gcc	ctg	gac	ctg	cag	gag	ggg	1593
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5189-2.ST25.txt

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5189-2.ST25.txt

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Gln	His	Ser	Pro	Asp	Leu	Ile	Leu	Pro	Leu	His	Gly	Leu	Arg	Asn	Val		
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aaa	gcc	atc	gac	tat	gac	cca	ctg	gac	aag	ttc	atc	tac	tgg	gtg	gat	3033	
Lys	Ala	Ile	Asp	Tyr	Asp	Pro	Leu	Asp	Lys	Phe	Ile	Tyr	Trp	Val	Asp		
980					985					990					995		
ggg	cgc	cag	aac	atc	aag	cga	gcc	aag	gac	gac	ggg	acc	cag	ccc		3078	
Gly	Arg	Gln	Asn	Ile	Lys	Arg	Ala	Lys	Asp	Asp	Gly	Thr	Gln	Pro			
				1000					1005					1010			
ttt	gtt	ttg	acc	tct	ctg	agc	caa	ggc	caa	aac	cca	gac	agg	cag		3123	
Phe	Val	Leu	Thr	Ser	Leu	Ser	Gln	Gly	Gln	Asn	Pro	Asp	Arg	Gln			
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ccc	cac	gac	ctc	agc	atc	gac	atc	tac	agc	cgg	aca	ctg	ttc	tgg		3168	
Pro	His	Asp	Leu	Ser	Ile	Asp	Ile	Tyr	Ser	Arg	Thr	Leu	Phe	Trp			
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acg	tgc	gag	gcc	acc	aat	acc	atc	aac	gtc	cac	agg	ctg	agc	ggg		3213	

5189-2.ST25.txt

Thr	Cys	Glu	Ala	Thr	Asn	Thr	Ile	Asn	Val	His	Arg	Leu	Ser	Gly		
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gaa	gcc	atg	ggg	gtg	gtg	ctg	cgt	ggg	gac	cgc	gac	aag	ccc	agg		3258
Glu	Ala	Met	Gly	Val	Val	Leu	Arg	Gly	Asp	Arg	Asp	Lys	Pro	Arg		1070
				1060					1065							
gcc	atc	gtc	gtc	aac	gcg	gag	cga	ggg	tac	ctg	tac	ttc	acc	aac		3303
Ala	Ile	Val	Val	Asn	Ala	Glu	Arg	Gly	Tyr	Leu	Tyr	Phe	Thr	Asn		1085
				1075					1080							
atg	cag	gac	cgg	gca	gcc	aag	atc	gaa	cgc	gca	gcc	ctg	gac	ggc		3348
Met	Gln	Asp	Arg	Ala	Ala	Lys	Ile	Glu	Arg	Ala	Ala	Leu	Asp	Gly		1100
				1090					1095							
acc	gag	cgc	gag	gtc	ctc	ttc	acc	acc	ggc	ctc	atc	cgc	cct	gtg		3393
Thr	Glu	Arg	Glu	Val	Leu	Phe	Thr	Thr	Gly	Leu	Ile	Arg	Pro	Val		1115
				1105					1110							
gcc	ctg	gtg	gta	gac	aac	aca	ctg	ggc	aag	ctg	ttc	tgg	gtg	gac		3438
Ala	Leu	Val	Val	Asp	Asn	Thr	Leu	Gly	Lys	Leu	Phe	Trp	Val	Asp		1130
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gcg	gac	ctg	aag	cgc	att	gag	agc	tgt	gac	ctg	tca	ggg	gcc	aac		3483
Ala	Asp	Leu	Lys	Arg	Ile	Glu	Ser	Cys	Asp	Leu	Ser	Gly	Ala	Asn		1145
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cgc	ctg	acc	ctg	gag	gac	gcc	aac	atc	gtg	cag	cct	ctg	ggc	ctg		3528
Arg	Leu	Thr	Leu	Glu	Asp	Ala	Asn	Ile	Val	Gln	Pro	Leu	Gly	Leu		1160
				1150					1155							
acc	atc	ctt	ggc	aag	cat	ctc	tac	tgg	atc	gac	cgc	cag	cag	cag		3573
Thr	Ile	Leu	Gly	Lys	His	Leu	Tyr	Trp	Ile	Asp	Arg	Gln	Gln	Gln		1175
				1165					1170							
atg	atc	gag	cgt	gtg	gag	aag	acc	acc	ggg	gac	aag	cgg	act	cgc		3618
Met	Ile	Glu	Arg	Val	Glu	Lys	Thr	Thr	Gly	Asp	Lys	Arg	Thr	Arg		1190
				1180					1185							
atc	cag	ggc	cgt	gtc	gcc	cac	ctc	act	ggc	atc	cat	gca	gtg	gag		3663
Ile	Gln	Gly	Arg	Val	Ala	His	Leu	Thr	Gly	Ile	His	Ala	Val	Glu		1205
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gaa	gtc	agc	ctg	gag	gag	ttc	tca	gcc	cac	cca	tgt	gcc	cgt	gac		3708
Glu	Val	Ser	Leu	Glu	Glu	Phe	Ser	Ala	His	Pro	Cys	Ala	Arg	Asp		1220
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aat	ggt	ggc	tgc	tcc	cac	atc	tgt	att	gcc	aag	ggt	gat	ggg	aca		3753
Asn	Gly	Gly	Cys	Ser	His	Ile	Cys	Ile	Ala	Lys	Gly	Asp	Gly	Thr		1235
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cca	cgg	tgc	tca	tgc	cca	gtc	cac	ctc	gtg	ctc	ctg	cag	aac	ctg		3798
Pro	Arg	Cys	Ser	Cys	Pro	Val	His	Leu	Val	Leu	Leu	Gln	Asn	Leu		1250
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ctg	acc	tgt	gga	gag	ccg	ccc	acc	tgc	tcc	ccg	gac	cag	ttt	gca		3843
Leu	Thr	Cys	Gly	Glu	Pro	Pro	Thr	Cys	Ser	Pro	Asp	Gln	Phe	Ala		1265
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tgt	gcc	aca	ggg	gag	atc	gac	tgt	atc	ccc	ggg	gcc	tgg	cgc	tgt		3888
Cys	Ala	Thr	Gly	Glu	Ile	Asp	Cys	Ile	Pro	Gly	Ala	Trp	Arg	Cys		1280
				1270					1275							
gac	ggc	ttt	ccc	gag	tgc	gat	gac	cag	agc	gac	gag	gag	ggc	tgc		3933

5189-2.ST25.txt

Asp	Gly	Phe	Pro	Glu	Cys	Asp	Asp	Gln	Ser	Asp	Glu	Glu	Gly	Cys	
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ccc	gtg	tgc	tcc	gcc	gcc	cag	ttc	ccc	tgc	gcg	cgg	ggt	cag	tgt	3978
Pro	Val	Cys	Ser	Ala	Ala	Gln	Phe	Pro	Cys	Ala	Arg	Gly	Gln	Cys	
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gtg	gac	ctg	cgc	ctg	cgc	tgc	gac	ggc	gag	gca	gac	tgt	cag	gac	4023
Val	Asp	Leu	Arg	Leu	Arg	Cys	Asp	Gly	Glu	Ala	Asp	Cys	Gln	Asp	
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cgc	tca	gac	gag	gcg	gac	tgt	gac	gcc	atc	tgc	ctg	ccc	aac	cag	4068
Arg	Ser	Asp	Glu	Ala	Asp	Cys	Asp	Ala	Ile	Cys	Leu	Pro	Asn	Gln	
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ttc	cgg	tgt	gcg	agc	ggc	cag	tgt	gtc	ctc	atc	aaa	cag	cag	tgc	4113
Phe	Arg	Cys	Ala	Ser	Gly	Gln	Cys	Val	Leu	Ile	Lys	Gln	Gln	Cys	
				1345					1350					1355	
gac	tcc	ttc	ccc	gac	tgt	atc	gac	ggc	tcc	gac	gag	ctc	atg	tgt	4158
Asp	Ser	Phe	Pro	Asp	Cys	Ile	Asp	Gly	Ser	Asp	Glu	Leu	Met	Cys	
				1360					1365					1370	
gaa	atc	acc	aag	ccg	ccc	tca	gac	gac	agc	ccg	gcc	cac	agc	agt	4203
Glu	Ile	Thr	Lys	Pro	Pro	Ser	Asp	Asp	Ser	Pro	Ala	His	Ser	Ser	
				1375					1380					1385	
gcc	atc	ggg	ccc	gtc	att	ggc	atc	atc	ctc	tct	ctc	ttc	gtc	atg	4248
Ala	Ile	Gly	Pro	Val	Ile	Gly	Ile	Ile	Leu	Ser	Leu	Phe	Val	Met	
				1390					1395					1400	
ggt	ggt	gtc	tat	ttt	gtg	tgc	cag	cgc	gtg	gtg	tgc	cag	cgc	tat	4293
Gly	Gly	Val	Tyr	Phe	Val	Cys	Gln	Arg	Val	Val	Cys	Gln	Arg	Tyr	
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gcg	ggg	gcc	aac	ggg	ccc	ttc	ccg	cac	gag	tat	gtc	agc	ggg	acc	4338
Ala	Gly	Ala	Asn	Gly	Pro	Phe	Pro	His	Glu	Tyr	Val	Ser	Gly	Thr	
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ccg	cac	gtg	ccc	ctc	aat	ttc	ata	gcc	ccg	ggc	ggt	tcc	cag	cat	4383
Pro	His	Val	Pro	Leu	Asn	Phe	Ile	Ala	Pro	Gly	Gly	Ser	Gln	His	
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ggc	ccc	ttc	aca	ggc	atc	gca	tgc	gga	aag	tcc	atg	atg	agc	tcc	4428
Gly	Pro	Phe	Thr	Gly	Ile	Ala	Cys	Gly	Lys	Ser	Met	Met	Ser	Ser	
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gtg	agc	ctg	atg	ggg	ggc	cgg	ggc	ggg	gtg	ccc	ctc	tac	gac	cgg	4473
Val	Ser	Leu	Met	Gly	Gly	Arg	Gly	Gly	Val	Pro	Leu	Tyr	Asp	Arg	
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aac	cac	gtc	aca	ggg	gcc	tcg	tcc	agc	agc	tcg	tcc	agc	acg	aag	4518
Asn	His	Val	Thr	Gly	Ala	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Thr	Lys	
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gcc	acg	ctg	tac	ccg	ccg	atc	ctg	aac	ccg	ccg	ccc	tcc	ccg	gcc	4563
Ala	Thr	Leu	Tyr	Pro	Pro	Ile	Leu	Asn	Pro	Pro	Pro	Ser	Pro	Ala	
				1495					1500					1505	
acg	gac	ccc	tcc	ctg	tac	aac	atg	gac	atg	ttc	tac	tct	tca	aac	4608
Thr	Asp	Pro	Ser	Leu	Tyr	Asn	Met	Asp	Met	Phe	Tyr	Ser	Ser	Asn	
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att	ccg	gcc	act	gtg	aga	ccg	tac	agg	ccc	tac	atc	att	cga	gga	4653

5189-2.ST25.txt

Ile Pro Ala Thr Val Arg Pro Tyr Arg Pro Tyr Ile Ile Arg Gly
1525 1530 1535

atg gcg ccc ccg acg acg ccc tgc agc acc gac gtg tgt gac agc 4698
Met Ala Pro Pro Thr Thr Pro Cys Ser Thr Asp Val Cys Asp Ser 1550
1540 1545

gac tac agc gcc agc cgc tgg aag gcc agc aag tac tac ctg gat 4743
Asp Tyr Ser Ala Ser Arg Trp Lys Ala Ser Lys Tyr Tyr Leu Asp 1565
1555 1560

ttg aac tcg gac tca gac ccc tat cca ccc cca ccc acg ccc cac 4788
Leu Asn Ser Asp Ser Asp Pro Tyr Pro Pro Pro Pro Thr Pro His 1580
1570 1575

agc cag tac ctg tcg gcg gag gac agc tgc ccg ccc tcg ccc gcc 4833
Ser Gln Tyr Leu Ser Ala Glu Asp Ser Cys Pro Pro Ser Pro Ala 1595
1585 1590

acc gag agg agc tac ttc cat ctc ttc ccg ccc cct ccg tcc ccc 4878
Thr Glu Arg Ser Tyr Phe His Leu Phe Pro Pro Pro Pro Ser Pro 1610
1600 1605

tgc acg gac tca tcc tga cctcggccgg gccactctgg cttctctgtg 4926
Cys Thr Asp Ser Ser 1615

ccccgtgaaa tagtttttaa tatgaacaaa gaaaaaaata tattttatga tttaaaaaat 4986

aaatataatt gggatttttaa aaacatgaga aatgtgaact gtgatggggg gggcagggct 5046

gggagaactt tgtacagtgg aacaaatatt tataaactta attttgtaaa acag 5100

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<400> 50

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20 25 30

Pro Leu Leu Leu Phe Ala Asn Arg Arg Asp Val Arg Leu Val Asp Ala
35 40 45

Gly Gly Val Lys Leu Glu Ser Thr Ile Val Val Ser Gly Leu Glu Asp
50 55 60

Ala Ala Ala Val Asp Phe Gln Phe Ser Lys Gly Ala Val Tyr Trp Thr
65 70 75 80

Asp Val Ser Glu Glu Ala Ile Lys Gln Thr Tyr Leu Asn Gln Thr Gly
85 90 95

5189-2.ST25.txt

Ala Ala Val Gln Asn Val Val Ile Ser Gly Leu Val Ser Pro Asp Gly
 100 105 110
 Leu Ala Cys Asp Trp Val Gly Lys Lys Leu Tyr Trp Thr Asp Ser Glu
 115 120 125
 Thr Asn Arg Ile Glu Val Ala Asn Leu Asn Gly Thr Ser Arg Lys Val
 130 135 140
 Leu Phe Trp Gln Asp Leu Asp Gln Pro Arg Ala Ile Ala Leu Asp Pro
 145 150 155 160
 Ala His Gly Tyr Met Tyr Trp Thr Asp Trp Gly Glu Thr Pro Arg Ile
 165 170 175
 Glu Arg Ala Gly Met Asp Gly Ser Thr Arg Lys Ile Ile Val Asp Ser
 180 185 190
 Asp Ile Tyr Trp Pro Asn Gly Leu Thr Ile Asp Leu Glu Glu Gln Lys
 195 200 205
 Leu Tyr Trp Ala Asp Ala Lys Leu Ser Phe Ile His Arg Ala Asn Leu
 210 215 220
 Asp Gly Ser Phe Arg Gln Lys Val Val Glu Gly Ser Leu Thr His Pro
 225 230 235 240
 Phe Ala Leu Thr Leu Ser Gly Asp Thr Leu Tyr Trp Thr Asp Trp Gln
 245 250 255
 Thr Arg Ser Ile His Ala Cys Asn Lys Arg Thr Gly Gly Lys Arg Lys
 260 265 270
 Glu Ile Leu Ser Ala Leu Tyr Ser Pro Met Asp Ile Gln Val Leu Ser
 275 280 285
 Gln Glu Arg Gln Pro Phe Phe His Thr Arg Cys Glu Glu Asp Asn Gly
 290 295 300
 Gly Cys Ser His Leu Cys Leu Leu Ser Pro Ser Glu Pro Phe Tyr Thr
 305 310 315 320
 Cys Ala Cys Pro Thr Gly Val Gln Leu Gln Asp Asn Gly Arg Thr Cys
 325 330 335
 Lys Ala Gly Ala Glu Glu Val Leu Leu Leu Ala Arg Arg Thr Asp Leu
 340 345 350

5189-2.ST25.txt

Arg Arg Ile Ser Leu Asp Thr Pro Asp Phe Thr Asp Ile Val Leu Gln
 355 360 365
 Val Asp Asp Ile Arg His Ala Ile Ala Ile Asp Tyr Asp Pro Leu Glu
 370 375 380
 Gly Tyr Val Tyr Trp Thr Asp Asp Glu Val Arg Ala Ile Arg Arg Ala
 385 390 395 400
 Tyr Leu Asp Gly Ser Gly Ala Gln Thr Leu Val Asn Thr Glu Ile Asn
 405 410 415
 Asp Pro Asp Gly Ile Ala Val Asp Trp Val Ala Arg Asn Leu Tyr Trp
 420 425 430
 Thr Asp Thr Gly Thr Asp Arg Ile Glu Val Thr Arg Leu Asn Gly Thr
 435 440 445
 Ser Arg Lys Ile Leu Val Ser Glu Asp Leu Asp Glu Pro Arg Ala Ile
 450 455 460
 Ala Leu His Pro Val Met Gly Leu Met Tyr Trp Thr Asp Trp Gly Glu
 465 470 475 480
 Asn Pro Lys Ile Glu Cys Ala Asn Leu Asp Gly Gln Glu Arg Arg Val
 485 490 495
 Leu Val Asn Ala Ser Leu Gly Trp Pro Asn Gly Leu Ala Leu Asp Leu
 500 505 510
 Gln Glu Gly Lys Leu Tyr Trp Gly Asp Ala Lys Thr Asp Lys Ile Glu
 515 520 525
 Val Ile Asn Val Asp Gly Thr Lys Arg Arg Thr Leu Leu Glu Asp Lys
 530 535 540
 Leu Pro His Ile Phe Gly Phe Thr Leu Leu Gly Asp Phe Ile Tyr Trp
 545 550 555 560
 Thr Asp Trp Gln Arg Arg Ser Ile Glu Arg Val His Lys Val Lys Ala
 565 570 575
 Ser Arg Asp Val Ile Ile Asp Gln Leu Pro Asp Leu Met Gly Leu Lys
 580 585 590
 Ala Val Asn Val Ala Lys Val Val Gly Thr Asn Pro Cys Ala Asp Arg
 595 600 605

5189-2.ST25.txt

Asn Gly Gly Cys Ser His Leu Cys Phe Phe Thr Pro His Ala Thr Arg
 610 615 620
 Cys Gly Cys Pro Ile Gly Leu Glu Leu Leu Ser Asp Met Lys Thr Cys
 625 630 635 640
 Ile Val Pro Glu Ala Phe Leu Val Phe Thr Ser Arg Ala Ala Ile His
 645 650 655
 Arg Ile Ser Leu Glu Thr Asn Asn Asn Asp Val Ala Ile Pro Leu Thr
 660 665 670
 Gly Val Lys Glu Ala Ser Ala Leu Asp Phe Asp Val Ser Asn Asn His
 675 680 685
 Ile Tyr Trp Thr Asp Val Ser Leu Lys Thr Ile Ser Arg Ala Phe Met
 690 695 700
 Asn Gly Ser Ser Val Glu His Val Val Glu Phe Gly Leu Asp Tyr Pro
 705 710 715 720
 Glu Gly Met Ala Val Asp Trp Met Gly Lys Asn Leu Tyr Trp Ala Asp
 725 730 735
 Thr Gly Thr Asn Arg Ile Glu Val Ala Arg Leu Asp Gly Gln Phe Arg
 740 745 750
 Gln Val Leu Val Trp Arg Asp Leu Asp Asn Pro Arg Ser Leu Ala Leu
 755 760 765
 Asp Pro Thr Lys Gly Tyr Ile Tyr Trp Thr Glu Trp Gly Gly Lys Pro
 770 775 780
 Arg Ile Val Arg Ala Phe Met Asp Gly Thr Asn Cys Met Thr Leu Val
 785 790 795 800
 Asp Lys Val Gly Arg Ala Asn Asp Leu Thr Ile Asp Tyr Ala Asp Gln
 805 810 815
 Arg Leu Tyr Trp Thr Asp Leu Asp Thr Asn Met Ile Glu Ser Ser Asn
 820 825 830
 Met Leu Gly Gln Glu Arg Val Val Ile Ala Asp Asp Leu Pro His Pro
 835 840 845
 Phe Gly Leu Thr Gln Tyr Ser Asp Tyr Ile Tyr Trp Thr Asp Trp Asn
 850 855 860

5189-2.ST25.txt

Leu His Ser Ile Glu Arg Ala Asp Lys Thr Ser Gly Arg Asn Arg Thr
 865 870 875 880
 Leu Ile Gln Gly His Leu Asp Phe Val Met Asp Ile Leu Val Phe His
 885 890 895
 Ser Ser Arg Gln Asp Gly Leu Asn Asp Cys Met His Asn Asn Gly Gln
 900 905 910
 Cys Gly Gln Leu Cys Leu Ala Ile Pro Gly Gly His Arg Cys Gly Cys
 915 920 925
 Ala Ser His Tyr Thr Leu Asp Pro Ser Ser Arg Asn Cys Ser Pro Pro
 930 935 940
 Thr Thr Phe Leu Leu Phe Ser Gln Lys Ser Ala Ile Ser Arg Met Ile
 945 950 955 960
 Pro Asp Asp Gln His Ser Pro Asp Leu Ile Leu Pro Leu His Gly Leu
 965 970 975
 Arg Asn Val Lys Ala Ile Asp Tyr Asp Pro Leu Asp Lys Phe Ile Tyr
 980 985 990
 Trp Val Asp Gly Arg Gln Asn Ile Lys Arg Ala Lys Asp Asp Gly Thr
 995 1000 1005
 Gln Pro Phe Val Leu Thr Ser Leu Ser Gln Gly Gln Asn Pro Asp
 1010 1015 1020
 Arg Gln Pro His Asp Leu Ser Ile Asp Ile Tyr Ser Arg Thr Leu
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 Phe Trp Thr Cys Glu Ala Thr Asn Thr Ile Asn Val His Arg Leu
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 Ser Gly Glu Ala Met Gly Val Val Leu Arg Gly Asp Arg Asp Lys
 1055 1060 1065
 Pro Arg Ala Ile Val Val Asn Ala Glu Arg Gly Tyr Leu Tyr Phe
 1070 1075 1080
 Thr Asn Met Gln Asp Arg Ala Ala Lys Ile Glu Arg Ala Ala Leu
 1085 1090 1095
 Asp Gly Thr Glu Arg Glu Val Leu Phe Thr Thr Gly Leu Ile Arg
 1100 1105 1110

5189-2.ST25.txt

Pro Val Ala Leu Val Val Asp Asn Thr Leu Gly Lys Leu Phe Trp
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 Val Asp Ala Asp Leu Lys Arg Ile Glu Ser Cys Asp Leu Ser Gly
 1130 1135 1140
 Ala Asn Arg Leu Thr Leu Glu Asp Ala Asn Ile Val Gln Pro Leu
 1145 1150 1155
 Gly Leu Thr Ile Leu Gly Lys His Leu Tyr Trp Ile Asp Arg Gln
 1160 1165 1170
 Gln Gln Met Ile Glu Arg Val Glu Lys Thr Thr Gly Asp Lys Arg
 1175 1180 1185
 Thr Arg Ile Gln Gly Arg Val Ala His Leu Thr Gly Ile His Ala
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 Val Glu Glu Val Ser Leu Glu Glu Phe Ser Ala His Pro Cys Ala
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 Arg Asp Asn Gly Gly Cys Ser His Ile Cys Ile Ala Lys Gly Asp
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 Gly Thr Pro Arg Cys Ser Cys Pro Val His Leu Val Leu Leu Gln
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 1250 1255 1260
 Phe Ala Cys Ala Thr Gly Glu Ile Asp Cys Ile Pro Gly Ala Trp
 1265 1270 1275
 Arg Cys Asp Gly Phe Pro Glu Cys Asp Asp Gln Ser Asp Glu Glu
 1280 1285 1290
 Gly Cys Pro Val Cys Ser Ala Ala Gln Phe Pro Cys Ala Arg Gly
 1295 1300 1305
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 1325 1330 1335
 Asn Gln Phe Arg Cys Ala Ser Gly Gln Cys Val Leu Ile Lys Gln
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5189-2.ST25.txt

Gln Cys Asp Ser Phe Pro Asp Cys Ile Asp Gly Ser Asp Glu Leu
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 Met Cys Glu Ile Thr Lys Pro Pro Ser Asp Asp Ser Pro Ala His
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 1385 1390 1395
 Val Met Gly Gly Val Tyr Phe Val Cys Gln Arg Val Val Cys Gln
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 Arg Tyr Ala Gly Ala Asn Gly Pro Phe Pro His Glu Tyr Val Ser
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 Gly Thr Pro His Val Pro Leu Asn Phe Ile Ala Pro Gly Gly Ser
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 Gln His Gly Pro Phe Thr Gly Ile Ala Cys Gly Lys Ser Met Met
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 Ser Ser Val Ser Leu Met Gly Gly Arg Gly Gly Val Pro Leu Tyr
 1460 1465 1470
 Asp Arg Asn His Val Thr Gly Ala Ser Ser Ser Ser Ser Ser Ser
 1475 1480 1485
 Thr Lys Ala Thr Leu Tyr Pro Pro Ile Leu Asn Pro Pro Pro Ser
 1490 1495 1500
 Pro Ala Thr Asp Pro Ser Leu Tyr Asn Met Asp Met Phe Tyr Ser
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 Arg Gly Met Ala Pro Pro Thr Thr Pro Cys Ser Thr Asp Val Cys
 1535 1540 1545
 Asp Ser Asp Tyr Ser Ala Ser Arg Trp Lys Ala Ser Lys Tyr Tyr
 1550 1555 1560
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5189-2.ST25.txt

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Ser Pro Cys Thr Asp Ser Ser
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 Leu Leu Leu Leu Ala Val Leu Leu Ala Ala His Pro Asp Ala Gln Ala
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gag gtg cgc ttg tct gta ccc ccg ctg gtg gag gtg atg cga gga aag 146
 Glu Val Arg Leu Ser Val Pro Pro Leu Val Glu Val Met Arg Gly Lys
 35 40 45

tct gtc att ctg gac tgc acc cct acg gga acc cac gac cat tat atg 194
 Ser Val Ile Leu Asp Cys Thr Pro Thr Gly Thr His Asp His Tyr Met
 50 55 60

ctg gaa tgg ttc ctt acc gac cgc tcg gga gct cgc ccc cgc cta gcc 242
 Leu Glu Trp Phe Leu Thr Asp Arg Ser Gly Ala Arg Pro Arg Leu Ala
 65 70 75

tcg gct gag atg cag ggc tct gag ctc cag gtc aca atg cac gac acc 290
 Ser Ala Glu Met Gln Gly Ser Glu Leu Gln Val Thr Met His Asp Thr
 80 85 90 95

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 Arg Gly Arg Ser Pro Pro Tyr Gln Leu Asp Ser Gln Gly Arg Leu Val
 100 105 110

ctg gct gag gcc cag gtg ggc gac gag cga gac tac gtg tgc gtg gtg 386
 Leu Ala Glu Ala Gln Val Gly Asp Glu Arg Asp Tyr Val Cys Val Val
 115 120 125

agg gca ggg gcg gca ggc act gct gag gcc act gcg cgg ctc aac gtg 434
 Arg Ala Gly Ala Ala Gly Thr Ala Glu Ala Thr Ala Arg Leu Asn Val
 130 135 140

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 Phe Ala Lys Pro Glu Ala Thr Glu Val Ser Pro Asn Lys Gly Thr Leu
 145 150 155

tct gtg atg gag gac tct gcc cag gag atc gcc acc tgc aac agc cgg 530
 Ser Val Met Glu Asp Ser Ala Gln Glu Ile Ala Thr Cys Asn Ser Arg
 160 165 170 175

aac ggg aac ccg gcc ccc aag atc acg tgg tat cgc aac ggg cag cgc 578

5189-2.ST25.txt

Asn	Gly	Asn	Pro	Ala	Pro	Lys	Ile	Thr	Trp	Tyr	Arg	Asn	Gly	Gln	Arg	
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ctg	gag	gtg	ccc	gta	gag	atg	aac	cca	gag	ggc	tac	atg	acc	agc	cgc	626
Leu	Glu	Val	Pro	Val	Glu	Met	Asn	Pro	Glu	Gly	Tyr	Met	Thr	Ser	Arg	
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acg	gtc	cgg	gag	gcc	tcg	ggc	ctg	ctc	tcc	ctc	acc	agc	acc	ctc	tac	674
Thr	Val	Arg	Glu	Ala	Ser	Gly	Leu	Leu	Ser	Leu	Thr	Ser	Thr	Leu	Tyr	
		210					215					220				
ctg	cgg	ctc	cgc	aag	gat	gac	cga	gac	gcc	agc	ttc	cac	tgc	gcc	gcc	722
Leu	Arg	Leu	Arg	Lys	Asp	Asp	Arg	Asp	Ala	Ser	Phe	His	Cys	Ala	Ala	
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cac	tac	agc	ctg	ccc	gag	ggc	cgc	cac	ggc	cgc	ctg	gac	agc	ccc	acc	770
His	Tyr	Ser	Leu	Pro	Glu	Gly	Arg	His	Gly	Arg	Leu	Asp	Ser	Pro	Thr	
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ttc	cac	ctc	acc	ctg	cac	tat	ccc	acg	gag	cac	gtg	cag	ttc	tgg	gtg	818
Phe	His	Leu	Thr	Leu	His	Tyr	Pro	Thr	Glu	His	Val	Gln	Phe	Trp	Val	
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ggc	agc	ccg	tcc	acc	cca	gca	ggc	tgg	gta	cgc	gag	ggt	gac	act	gtc	866
Gly	Ser	Pro	Ser	Thr	Pro	Ala	Gly	Trp	Val	Arg	Glu	Gly	Asp	Thr	Val	
			275					280					285			
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Gln	Leu	Leu	Cys	Arg	Gly	Asp	Gly	Ser	Pro	Ser	Pro	Glu	Tyr	Thr	Leu	
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Phe	Arg	Leu	Gln	Asp	Glu	Gln	Glu	Glu	Val	Leu	Asn	Val	Asn	Leu	Glu	
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ggc	tgc	aga	gtg	gag	gat	tac	gac	gcg	gca	gat	gac	gtg	cag	ctc	tcc	1058
Gly	Cys	Arg	Val	Glu	Asp	Tyr	Asp	Ala	Ala	Asp	Asp	Val	Gln	Leu	Ser	
				340					345					350		
aag	acg	ctg	gag	ctg	cgc	gtg	gcc	tat	ctg	gac	ccc	ctg	gag	ctc	agc	1106
Lys	Thr	Leu	Glu	Leu	Arg	Val	Ala	Tyr	Leu	Asp	Pro	Leu	Glu	Leu	Ser	
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gag	ggg	aag	gtg	ctt	tcc	tta	cct	cta	aac	agc	agt	gca	gtc	gtg	aac	1154
Glu	Gly	Lys	Val	Leu	Ser	Leu	Pro	Leu	Asn	Ser	Ser	Ala	Val	Val	Asn	
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tgc	tcc	gtg	cac	ggc	ctg	ccc	acc	cct	gcc	cta	cgc	tgg	acc	aag	gac	1202
Cys	Ser	Val	His	Gly	Leu	Pro	Thr	Pro	Ala	Leu	Arg	Trp	Thr	Lys	Asp	
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Ser	Thr	Pro	Leu	Gly	Asp	Gly	Pro	Met	Leu	Ser	Leu	Ser	Ser	Ile	Thr	
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ttc	gat	tcc	aat	ggc	acc	tac	gta	tgt	gag	gcc	tcc	ctg	ccc	aca	gtc	1298
Phe	Asp	Ser	Asn	Gly	Thr	Tyr	Val	Cys	Glu	Ala	Ser	Leu	Pro	Thr	Val	
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ccg	gtc	ctc	agc	cgc	acc	cag	aac	ttc	acg	ctg	ctg	gtc	caa	ggc	tcg	1346

5189-2.ST25.txt

Pro	Val	Leu	Ser	Arg	Thr	Gln	Asn	Phe	Thr	Leu	Leu	Val	Gln	Gly	Ser	
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Pro	Glu	Leu	Lys	Thr	Ala	Glu	Ile	Glu	Pro	Lys	Ala	Asp	Gly	Ser	Trp	
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agg	gaa	gga	gac	gaa	gtc	aca	ctc	atc	tgc	tct	gcc	cgc	ggc	cat	cca	1442
Arg	Glu	Gly	Asp	Glu	Val	Thr	Leu	Ile	Cys	Ser	Ala	Arg	Gly	His	Pro	
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gac	ccc	aaa	ctc	agc	tgg	agc	caa	ttg	ggg	ggc	agc	ccc	gca	gag	cca	1490
Asp	Pro	Lys	Leu	Ser	Trp	Ser	Gln	Leu	Gly	Gly	Ser	Pro	Ala	Glu	Pro	
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atc	ccc	gga	cgg	cag	ggt	tgg	gtg	agc	agc	tct	ctg	acc	ctg	aaa	gtg	1538
Ile	Pro	Gly	Arg	Gln	Gly	Trp	Val	Ser	Ser	Ser	Leu	Thr	Leu	Lys	Val	
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acc	agc	gcc	ctg	agc	cgc	gat	ggc	atc	tcc	tgt	gaa	gcc	tcc	aac	ccc	1586
Thr	Ser	Ala	Leu	Ser	Arg	Asp	Gly	Ile	Ser	Cys	Glu	Ala	Ser	Asn	Pro	
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Gly	Pro	Cys	Cys	Arg	Gln	Arg	Arg	Glu	Lys	Gly	Ala	Pro	Pro	Pro	Gly	
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gag	cca	ggg	ctg	agc	cac	tcg	ggg	tcg	gag	caa	cca	gag	cag	acc	ggc	1826
Glu	Pro	Gly	Leu	Ser	His	Ser	Gly	Ser	Glu	Gln	Pro	Glu	Gln	Thr	Gly	
			595					600					605			
ctt	ctc	atg	gga	ggt	gcc	tcc	gga	gga	gcc	agg	ggt	ggc	agc	ggg	ggc	1874
Leu	Leu	Met	Gly	Gly	Ala	Ser	Gly	Gly	Ala	Arg	Gly	Gly	Ser	Gly	Gly	
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Phe	Gly	Asp	Glu	Cys												
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5189-2.ST25.txt

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 <211> 628
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<400> 52

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Val Arg Leu Ser Val Pro Pro Leu Val Glu Val Met Arg Gly Lys Ser
 35 40 45

Val Ile Leu Asp Cys Thr Pro Thr Gly Thr His Asp His Tyr Met Leu
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Glu Trp Phe Leu Thr Asp Arg Ser Gly Ala Arg Pro Arg Leu Ala Ser
 65 70 75 80

Ala Glu Met Gln Gly Ser Glu Leu Gln Val Thr Met His Asp Thr Arg
 85 90 95

Gly Arg Ser Pro Pro Tyr Gln Leu Asp Ser Gln Gly Arg Leu Val Leu
 100 105 110

Ala Glu Ala Gln Val Gly Asp Glu Arg Asp Tyr Val Cys Val Val Arg
 115 120 125

Ala Gly Ala Ala Gly Thr Ala Glu Ala Thr Ala Arg Leu Asn Val Phe
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Ala Lys Pro Glu Ala Thr Glu Val Ser Pro Asn Lys Gly Thr Leu Ser
 145 150 155 160

Val Met Glu Asp Ser Ala Gln Glu Ile Ala Thr Cys Asn Ser Arg Asn
 165 170 175

Gly Asn Pro Ala Pro Lys Ile Thr Trp Tyr Arg Asn Gly Gln Arg Leu
 180 185 190

Glu Val Pro Val Glu Met Asn Pro Glu Gly Tyr Met Thr Ser Arg Thr
 195 200 205

5189-2.ST25.txt

Val Arg Glu Ala Ser Gly Leu Leu Ser Leu Thr Ser Thr Leu Tyr Leu
210 215 220

Arg Leu Arg Lys Asp Asp Arg Asp Ala Ser Phe His Cys Ala Ala His
225 230 235 240

Tyr Ser Leu Pro Glu Gly Arg His Gly Arg Leu Asp Ser Pro Thr Phe
245 250 255

His Leu Thr Leu His Tyr Pro Thr Glu His Val Gln Phe Trp Val Gly
260 265 270

Ser Pro Ser Thr Pro Ala Gly Trp Val Arg Glu Gly Asp Thr Val Gln
275 280 285

Leu Leu Cys Arg Gly Asp Gly Ser Pro Ser Pro Glu Tyr Thr Leu Phe
290 295 300

Arg Leu Gln Asp Glu Gln Glu Glu Val Leu Asn Val Asn Leu Glu Gly
305 310 315 320

Asn Leu Thr Leu Glu Gly Val Thr Arg Gly Gln Ser Gly Thr Tyr Gly
325 330 335

Cys Arg Val Glu Asp Tyr Asp Ala Ala Asp Asp Val Gln Leu Ser Lys
340 345 350

Thr Leu Glu Leu Arg Val Ala Tyr Leu Asp Pro Leu Glu Leu Ser Glu
355 360 365

Gly Lys Val Leu Ser Leu Pro Leu Asn Ser Ser Ala Val Val Asn Cys
370 375 380

Ser Val His Gly Leu Pro Thr Pro Ala Leu Arg Trp Thr Lys Asp Ser
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Thr Pro Leu Gly Asp Gly Pro Met Leu Ser Leu Ser Ser Ile Thr Phe
405 410 415

Asp Ser Asn Gly Thr Tyr Val Cys Glu Ala Ser Leu Pro Thr Val Pro
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Val Leu Ser Arg Thr Gln Asn Phe Thr Leu Leu Val Gln Gly Ser Pro
435 440 445

Glu Leu Lys Thr Ala Glu Ile Glu Pro Lys Ala Asp Gly Ser Trp Arg
450 455 460

5189-2.ST25.txt

Glu Gly Asp Glu Val Thr Leu Ile Cys Ser Ala Arg Gly His Pro Asp
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Pro Lys Leu Ser Trp Ser Gln Leu Gly Gly Ser Pro Ala Glu Pro Ile
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Pro Gly Arg Gln Gly Trp Val Ser Ser Ser Leu Thr Leu Lys Val Thr
500 505 510

Ser Ala Leu Ser Arg Asp Gly Ile Ser Cys Glu Ala Ser Asn Pro His
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Gly Asn Lys Arg His Val Phe His Phe Gly Thr Val Ser Pro Gln Thr
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Ser Gln Ala Gly Val Ala Val Met Ala Val Ala Val Ser Val Gly Leu
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565 570 575

Pro Cys Cys Arg Gln Arg Arg Glu Lys Gly Ala Pro Pro Pro Gly Glu
580 585 590

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tctcggtgca gcgggacagg gcgaagcggc ctgcgcccac ggagcgcgcg aactgcccc 180
gaagggaccg ccacccttgc cccctcagct gccactcgt gatttccagc ggcctccgcg 240
cgcgcacg atg ccc tcg gcc acc agc cac agc ggg agc ggc agc aag tcg 290

5189-2.ST25.txt

Met	Pro	Ser	Ala	Thr	Ser	His	Ser	Gly	Ser	Gly	Ser	Lys	Ser			
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gga Gly	gcc Ala	ggg Gly	gcc Ala	gcc Ala 35	gcg Ala	ccg Pro	gct Ala	tct Ser	cag Gln 40	cac His	ccc Pro	gca Ala	acc Thr	ggc Gly 45	acc Thr	386
ggc Gly	gct Ala	gtc Val	cag Gln 50	acc Thr	gag Glu	gcc Ala	atg Met	aag Lys 55	cag Gln	att Ile	ctc Leu	ggg Gly	gtg Val 60	atc Ile	gac Asp	434
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cag Gln 80	gaa Glu	cga Arg	atg Met	aac Asn	aaa Lys	ggg Gly 85	gaa Glu	agg Arg	ctt Leu	aat Asn	caa Gln 90	gat Asp	cag Gln	ctg Leu	gat Asp	530
gcc Ala 95	gtt Val	tct Ser	aag Lys	tac Tyr	cag Gln 100	gaa Glu	gtc Val	aca Thr	aat Asn	aat Asn 105	ttg Leu	gag Glu	ttt Phe	gca Ala	aaa Lys 110	578
gaa Glu	tta Leu	cag Gln	agg Arg	agt Ser 115	ttc Phe	atg Met	gca Ala	cta Leu	agt Ser 120	caa Gln	gat Asp	att Ile	cag Gln	aaa Lys 125	aca Thr	626
ata Ile	aag Lys	aag Lys	aca Thr 130	gca Ala	cgt Arg	cgg Arg	gag Glu	cag Gln 135	ctt Leu	atg Met	aga Arg	gaa Glu	gaa Glu 140	gct Ala	gaa Glu	674
cag Gln	aaa Lys	cgt Arg 145	tta Leu	aaa Lys	act Thr	gta Val	ctt Leu 150	gag Glu	cta Leu	cag Gln	tat Tyr	gtt Val 155	ttg Leu	gac Asp	aaa Lys	722
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gtg Val 175	cca Pro	ata Ile	ttg Leu	tcc Ser	gaa Glu 180	gag Glu	gag Glu	ttg Leu	tca Ser	ttg Leu 185	ttg Leu	gat Asp	gaa Glu	ttc Phe	tat Tyr 190	818
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tat Tyr	gaa Glu	cat His	gcc Ala 210	tcc Ser	att Ile	cac His	ctg Leu	tgg Trp 215	gac Asp	ctg Leu	ctg Leu	gaa Glu	ggg Gly 220	aag Lys	gaa Glu	914
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5189-2.ST25.txt

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tcc Ser 335	cct Pro	tca Ser	gta Val	cca Pro	gag Glu 340	ccc Pro	cac His	tct Ser	ttg Leu	act Thr 345	cca Pro	gtg Val	gct Ala	cag Gln	gca Ala 350	1298
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ccc Pro	ttg Leu	tac Tyr	cag Gln 450	cct Pro	tct Ser	cat His	gct Ala	aca Thr 455	gag Glu	caa Gln	cga Arg	cca Pro	cag Gln 460	aag Lys	gaa Glu	1634
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5189-2.ST25.txt

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			690					695					700			
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Met	Asn	Thr	Gln	Gln	Val	Asn										
		705														
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tgtcagcttt	ctattacctg	gatatggaag	gaaactatit	ttactctgca	tgttctgtcc											2588
taagcgtcat	cttgagcctt	gcacatgata	ctcagattcc	tcacccttgc	ttaggagtaa											2648
aacaatatac	tttacagggt	gataataatc	tccatagtta	tttgaagtgg	cttgaaaaag											2708
gcaagattga	cttttatgac	attggataaa	atctacaaat	cagccctcga	gttattcaat											2768
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5189-2.ST25.txt

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gcataccaaa ttatgcatgg gtcctaatac cacatataag gctggctacc agctttgaca 2948
cagcactggt catctggcca aacaactgtg gttaaaaaca catgtaaaat gctttttaac 3008
agctgatact gtataagaca aagccaagat gcaaaattag gctttgattg gcactttttg 3068
aaaaatatgc aacaaatatg ggatgtaatc cggatggccg cttctgtact taatgtgaaa 3128
tatttagata cttttttgaa cacttaacag tttctttgag acaatgactt ttgtaaggat 3188
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ttagattgat ttccctgttt cagggaaatc acggacagta gtttcagttc tgatgggtata 3488
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gcagcttatg tgattca 3565

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Gly Ala Ala Ala Pro Ala Ser Gln His Pro Ala Thr Gly Thr Gly Ala
35 40 45
Val Gln Thr Glu Ala Met Lys Gln Ile Leu Gly Val Ile Asp Lys Lys
50 55 60
Leu Arg Asn Leu Glu Lys Lys Lys Gly Lys Leu Asp Asp Tyr Gln Glu
65 70 75 80
Arg Met Asn Lys Gly Glu Arg Leu Asn Gln Asp Gln Leu Asp Ala Val
85 90 95
Ser Lys Tyr Gln Glu Val Thr Asn Asn Leu Glu Phe Ala Lys Glu Leu
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Gln Arg Ser Phe Met Ala Leu Ser Gln Asp Ile Gln Lys Thr Ile Lys
115 120 125

5189-2.ST25.txt

Lys Thr Ala Arg Arg Glu Gln Leu Met Arg Glu Glu Ala Glu Gln Lys
 130 135 140
 Arg Leu Lys Thr Val Leu Glu Leu Gln Tyr Val Leu Asp Lys Leu Gly
 145 150 155 160
 Asp Asp Glu Val Arg Thr Asp Leu Lys Gln Gly Leu Asn Gly Val Pro
 165 170 175
 Ile Leu Ser Glu Glu Glu Leu Ser Leu Leu Asp Glu Phe Tyr Lys Leu
 180 185 190
 Val Asp Pro Glu Arg Asp Met Ser Leu Arg Leu Asn Glu Gln Tyr Glu
 195 200 205
 His Ala Ser Ile His Leu Trp Asp Leu Leu Glu Gly Lys Glu Lys Pro
 210 215 220
 Val Cys Gly Thr Thr Tyr Lys Val Leu Lys Glu Ile Val Glu Arg Val
 225 230 235 240
 Phe Gln Ser Asn Tyr Phe Asp Ser Thr His Asn His Gln Asn Gly Leu
 245 250 255
 Cys Glu Glu Glu Glu Ala Ala Ser Ala Pro Ala Val Glu Asp Gln Val
 260 265 270
 Pro Glu Ala Glu Pro Glu Pro Ala Glu Glu Tyr Thr Glu Gln Ser Glu
 275 280 285
 Val Glu Ser Thr Glu Tyr Val Asn Arg Gln Phe Met Ala Glu Thr Gln
 290 295 300
 Phe Thr Ser Gly Glu Lys Glu Gln Val Asp Glu Trp Thr Val Glu Thr
 305 310 315 320
 Val Glu Val Val Asn Ser Leu Gln Gln Gln Pro Gln Ala Ala Ser Pro
 325 330 335
 Ser Val Pro Glu Pro His Ser Leu Thr Pro Val Ala Gln Ala Asp Pro
 340 345 350
 Leu Val Arg Arg Gln Arg Val Gln Asp Leu Met Ala Gln Met Gln Gly
 355 360 365
 Pro Tyr Asn Phe Ile Gln Asp Ser Met Leu Asp Phe Glu Asn Gln Thr
 370 375 380

5189-2.ST25.txt

Leu Asp Pro Ala Ile Val Ser Ala Gln Pro Met Asn Pro Thr Gln Asn
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 Met Asp Met Pro Gln Leu Val Cys Pro Pro Val His Ser Glu Ser Arg
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 420 425 430
 Pro Leu Val Ser Ser Thr Ser Glu Gly Tyr Thr Ala Ser Gln Pro Leu
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 Tyr Gln Pro Ser His Ala Thr Glu Gln Arg Pro Gln Lys Glu Pro Ile
 450 455 460
 Asp Gln Ile Gln Ala Thr Ile Ser Leu Asn Thr Asp Gln Thr Thr Ala
 465 470 475 480
 Ser Ser Ser Leu Pro Ala Ala Ser Gln Pro Gln Val Phe Gln Ala Gly
 485 490 495
 Thr Ser Lys Pro Leu His Ser Ser Gly Ile Asn Val Asn Ala Ala Pro
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 Phe Gln Ser Met Gln Thr Val Phe Asn Met Asn Ala Pro Val Pro Pro
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 Val Asn Glu Pro Glu Thr Leu Lys Gln Gln Asn Gln Tyr Gln Ala Ser
 530 535 540
 Tyr Asn Gln Ser Phe Ser Ser Gln Pro His Gln Val Glu Gln Thr Glu
 545 550 555 560
 Leu Gln Gln Glu Gln Leu Gln Thr Val Val Gly Thr Tyr His Gly Ser
 565 570 575
 Pro Asp Gln Ser His Gln Val Thr Gly Asn His Gln Gln Pro Pro Gln
 580 585 590
 Gln Asn Thr Gly Phe Pro Arg Ser Asn Gln Pro Tyr Tyr Asn Ser Arg
 595 600 605
 Gly Val Ser Arg Gly Gly Ser Arg Gly Ala Arg Gly Leu Met Asn Gly
 610 615 620
 Tyr Arg Gly Pro Ala Asn Gly Phe Arg Gly Gly Tyr Asp Gly Tyr Arg
 625 630 635 640

5189-2.ST25.txt

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Ser Ala Pro Arg Asp Tyr Ser Gly Tyr Gln Arg Asp Gly Tyr Gln Gln
 660 665 670

Asn Phe Lys Arg Gly Ser Gly Gln Ser Gly Pro Arg Gly Ala Pro Arg
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Thr Gln Gln Val Asn
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 Met Pro Gly Pro Gln Gly Gly Arg Gly Ala Ala Thr
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 Met Ser Leu Gly Lys Leu Ser Pro Val Gly Trp Val Ser Ser Ser Gln
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 Gly Lys Arg Arg Leu Thr Ala Asp Met Ile Ser His Pro Leu Gly Asp
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 ttc cgc cac acc atg cat gtg ggc cgt ggc ggg gat gtc ttc ggg gac 553
 Phe Arg His Thr Met His Val Gly Arg Gly Asp Val Phe Gly Asp
 45 50 55 60
 acg tcc ttc ctc agc aac cac ggt ggc agc tcc ggg agc acc cat cgc 601
 Thr Ser Phe Leu Ser Asn His Gly Gly Ser Ser Gly Ser Thr His Arg
 65 70 75
 tca ccc cgc agc ttc ctg gcc aag aag ctg cag ctg gtg cgg agg gtg 649

5189-2.ST25.txt

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Gly	Ala	Pro	Pro	Arg	Arg	Met	Ala	Ser	Pro	Pro	Ala	Pro	Ser	Pro	Ala	
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cca	ccg	gcc	atc	tcc	ccc	atc	atc	aag	aac	gcc	atc	tcc	ctg	ccc	cag	745
Pro	Pro	Ala	Ile	Ser	Pro	Ile	Ile	Lys	Asn	Ala	Ile	Ser	Leu	Pro	Gln	
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ctc	aac	cag	gcc	gcc	tac	gac	agc	ctc	gtg	gtt	ggc	aag	ctc	agc	ttc	793
Leu	Asn	Gln	Ala	Ala	Tyr	Asp	Ser	Leu	Val	Val	Gly	Lys	Leu	Ser	Phe	
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Asp	Ser	Gly	Phe	Cys	Thr	Ile	Ser	Arg	Leu	Pro	Arg	Ser	Glu	Lys	Pro	
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His	Asp	Arg	Asp	Arg	Asp	Gly	Ser	Phe	Pro	Ser	Glu	Pro	Gly	Leu	Arg	
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Arg	Ser	Asp	Ser	Leu	Leu	Ser	Phe	Arg	Leu	Asp	Leu	Asp	Leu	Gly	Pro	
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Ser	Leu	Leu	Ser	Glu	Leu	Leu	Gly	Val	Met	Ser	Leu	Pro	Glu	Ala	Pro	
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Ala	Ala	Glu	Thr	Pro	Ala	Pro	Ala	Ala	Asn	Pro	Pro	Ala	Pro	Thr	Ala	
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Asn	Pro	Thr	Gly	Pro	Ala	Ala	Asn	Pro	Pro	Ala	Pro	Ala	Ala	Asn	Pro	
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Ser	Ala	Pro	Ala	Ala	Thr	Pro	Thr	Gly	Pro	Ala	Ala	Asn	Pro	Pro	Ala	
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cct	gcc	gca	agc	tcc	aca	ccc	cat	gga	cac	tgt	ccc	aac	ggg	gta	aca	1225
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Gly	Trp	Asp	Gly	Gly	His	His	Tyr	Pro	Glu	Met	Asp	Ala	Arg	Gln	Glu	
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5189-2.ST25.txt

Arg Val Glu Val Leu Pro Gln Ala Arg Ala Ser Trp Glu Ser Leu Asp
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 Glu Glu Trp Arg Ala Pro Gln Ala Gly Ser Arg Thr Pro Val Pro Ser
 350 355 360

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 Thr Val Gln Ala Asn Thr Phe Glu Phe Ala Asp Ala Glu Glu Asp Asp
 365 370 375 380

gag gtc aag gtg tga ggggctgggg cacggtccca gggccccacc taggtgcaga 1568
 Glu Val Lys Val

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 35 40 45

Met His Val Gly Arg Gly Gly Asp Val Phe Gly Asp Thr Ser Phe Leu
 50 55 60

Ser Asn His Gly Gly Ser Ser Gly Ser Thr His Arg Ser Pro Arg Ser
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Phe Leu Ala Lys Lys Leu Gln Leu Val Arg Arg Val Gly Ala Pro Pro

Arg Arg Met Ala Ser Pro Pro Ala Pro Ser Pro Ala Pro Pro Ala Ile
 100 105 110
 Ser Pro Ile Ile Lys Asn Ala Ile Ser Leu Pro Gln Leu Asn Gln Ala
 115 120 125
 Ala Tyr Asp Ser Leu Val Val Gly Lys Leu Ser Phe Asp Ser Ser Pro
 130 135 140
 Thr Ser Ser Thr Asp Gly His Ser Ser Tyr Gly Leu Asp Ser Gly Phe
 145 150 155 160
 Cys Thr Ile Ser Arg Leu Pro Arg Ser Glu Lys Pro His Asp Arg Asp
 165 170 175
 Arg Asp Gly Ser Phe Pro Ser Glu Pro Gly Leu Arg Arg Ser Asp Ser
 180 185 190
 Leu Leu Ser Phe Arg Leu Asp Leu Asp Leu Gly Pro Ser Leu Leu Ser
 195 200 205
 Glu Leu Leu Gly Val Met Ser Leu Pro Glu Ala Pro Ala Ala Glu Thr
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 Pro Ala Pro Ala Ala Asn Pro Pro Ala Pro Thr Ala Asn Pro Thr Gly
 225 230 235 240
 Pro Ala Ala Asn Pro Pro Ala Pro Ala Ala Asn Pro Ser Ala Pro Ala
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 Ala Thr Pro Thr Gly Pro Ala Ala Asn Pro Pro Ala Pro Ala Ala Ser
 260 265 270
 Ser Thr Pro His Gly His Cys Pro Asn Gly Val Thr Ala Gly Leu Gly
 275 280 285
 Pro Val Ala Glu Val Lys Ser Ser Pro Val Gly Gly Gly Pro Arg Gly
 290 295 300
 Pro Ala Gly Pro Ala Leu Gly Arg His Trp Gly Ala Gly Trp Asp Gly
 305 310 315 320
 Gly His His Tyr Pro Glu Met Asp Ala Arg Gln Glu Arg Val Glu Val
 325 330 335
 Leu Pro Gln Ala Arg Ala Ser Trp Glu Ser Leu Asp Glu Glu Trp Arg

340

345

350

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 caaccg atg gag gct ccg ctg caa act gga atg gtg ctt ggc gtg atg 288
 Met Glu Ala Pro Leu Gln Thr Gly Met Val Leu Gly Val Met
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 Ile Gly Ala Gly Val Ala Val Val Val Thr Ala Val Leu Ile Leu Leu
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 Val Val Arg Arg Leu Arg Val Pro Lys Thr Pro Ala Pro Asp Gly Pro
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 cgg tat cgg ttc cgg aag agg gac aaa gtg ctc ttc tat ggc cgg aag 432
 Arg Tyr Arg Phe Arg Lys Arg Asp Lys Val Leu Phe Tyr Gly Arg Lys
 50 55 60
 att atg cgg aag gtg tca caa tcc acc tcc tcc ctc gtg gat acc tct 480
 Ile Met Arg Lys Val Ser Gln Ser Thr Ser Ser Leu Val Asp Thr Ser
 65 70 75
 gtc tcc gcc acc tcc cgg cca cgc atg agg aag aaa ctg aag atg ctc 528
 Val Ser Ala Thr Ser Arg Pro Arg Met Arg Lys Lys Leu Lys Met Leu
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 aac att gcc aag aag atc ctg cgc atc cag aaa gag acg ccc acg ctg 576
 Asn Ile Ala Lys Lys Ile Leu Arg Ile Gln Lys Glu Thr Pro Thr Leu
 95 100 105 110
 cag cgg aag gag ccc ccg ccc gca gtg cta gaa gct gac ctg acc gag 624
 Gln Arg Lys Glu Pro Pro Pro Ala Val Leu Glu Ala Asp Leu Thr Glu
 115 120 125
 ggc gac ctg gct aac tcc cat ctg ccc tct gaa gtg ctt tat atg ctc 672
 Gly Asp Leu Ala Asn Ser His Leu Pro Ser Glu Val Leu Tyr Met Leu

135

Page 150

5189-2.ST25.txt

385				390				395								
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Arg	Thr	Pro	Thr	Gln	Glu	Pro	Arg	Glu	Gln	Pro	Ala	Gly	Ala	Cys	Glu	
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Tyr	Ser	Tyr	Cys	Glu	Asp	Glu	Ser	Ala	Thr	Gly	Gly	Cys	Pro	Phe	Gly	
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Arg	Val	Leu	Leu	His	His	Ala	Lys	Ala	Gly	Thr	Ile	Ile	Ala	Arg	Gln	
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Gly	Asp	Gln	Asp	Val	Ser	Leu	His	Phe	Val	Leu	Trp	Gly	Cys	Leu	His	
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gtg	tac	cag	cgc	atg	atc	gac	aag	gcg	gag	gac	gtg	tgc	ctg	ttc	gta	1824
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gcg	cag	ccc	ggg	gaa	ctg	gtg	ggg	cag	ctg	gcg	gtg	ctc	act	ggc	gaa	1872
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Pro	Leu	Ile	Phe	Thr	Leu	Arg	Ala	Gln	Arg	Asp	Cys	Thr	Phe	Leu	Arg	
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atc	tcc	aag	tcc	gac	ttc	tat	gag	atc	atg	cgc	gca	cag	ccc	agt	gtg	1968
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Asn	Gly	Arg	Leu	Arg	Ser	Val	Ile	Gln	Arg	Gly	Ser	Gly	Lys	Lys	Glu	
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ctg	gtg	ggc	gag	tac	ggc	cgc	ggc	gac	ctc	atc	ggc	gtg	gtg	gag	gca	2208
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5189-2.ST25.txt

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gca act gtg gca atc ctg cct gtg tgt gct gag gtc ccc atg gtg gcc Ala Thr Val Ala Ile Leu Pro Val Cys Ala Glu Val Pro Met Val Ala 735 740 745 750			2496
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gat agc atc caa gag ttc cgg ctg tca ggg tgg ctg gcc cag cag gag Asp Ser Ile Gln Glu Phe Arg Leu Ser Gly Trp Leu Ala Gln Gln Glu 785 790 795			2640
gat gca cac cgt atc gta ctc tac cag acg gac gcc tcg ctg acg ccc Asp Ala His Arg Ile Val Leu Tyr Gln Thr Asp Ala Ser Leu Thr Pro 800 805 810			2688
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5189-2.ST25.txt

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acg Thr	ggg Gly	aac Asn	acc Thr 930	att Ile	gcc Ala	ctt Leu	gtg Val	cta Leu 935	ggc Gly	ggg Gly	ggc Gly	ggg Gly	gcc Ala 940	agg Arg	ggc Gly	3072
tgc Cys	tcg Ser	cac His 945	atc Ile	gga Gly	gta Val	cta Leu	aag Lys 950	gca Ala	tta Leu	gag Glu	gag Glu	gcg Ala 955	ggg Gly	gtc Val	ccc Pro	3120
gtg Val	gac Asp 960	ctg Leu	gtg Val	ggc Gly	ggc Gly	acg Thr 965	tcc Ser	att Ile	ggc Gly	tct Ser	ttc Phe 970	atc Ile	gga Gly	gcg Ala	ttg Leu	3168
tac Tyr 975	gcg Ala	gag Glu	gag Glu	cgc Arg	agc Ser 980	gcc Ala	agc Ser	cgc Arg	acg Thr	agg Arg 985	cag Gln	cgg Arg	gcc Ala	cgg Arg	gag Glu 990	3216
tgg Trp	gcc Ala	aag Lys	agc Ser	atg Met 995	act Thr	tcg Ser	gtg Val	ctg Leu	gaa Glu 1000	cct Pro	gtg Val	ttg Leu	gac Asp	ctc Leu 1005	acg Thr	3264
tac Tyr	cca Pro	gtc Val	acc Thr 1010	tcc Ser	atg Met	ttc Phe	act Thr	ggg Gly 1015	tct Ser	gcc Ala	ttt Phe	aac Asn	cgc Arg 1020	agc Ser		3309
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cct Pro	tac Tyr	ttc Phe	aac Asn 1040	gtg Val	acc Thr	aca Thr	gat Asp	atc Ile 1045	acc Thr	gcc Ala	tca Ser	gcc Ala	atg Met 1050	cga Arg		3399
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cac His	cta Leu	ctc Leu	atg Met 1085	gat Asp	ggc Gly	ggc Gly	tac Tyr	atc Ile 1090	aac Asn	aat Asn	ctg Leu	cca Pro	gcg Ala 1095	gac Asp		3534
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5189-2.ST25.txt

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Tyr Cys Glu Tyr	Leu Arg Pro Pro	Ile Asp Cys Phe Lys Thr Met	
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Asp Phe Gly Lys	Phe Asp Gln Ile	Tyr Asp Val Gly Tyr Gln Tyr	
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Gly Lys Ala Val	Phe Gly Gly Trp	Ser Arg Gly Asn Val Ile Glu	
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Lys Met Leu Thr	Asp Arg Arg Ser	Thr Asp Leu Asn Glu Ser Arg	
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cgt gca gac gtg	ctt gcc ttc cca	agc tct ggc ttc act gac ttg	3984
Arg Ala Asp Val	Leu Ala Phe Pro	Ser Ser Gly Phe Thr Asp Leu	
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gca gag att gtg	tcc cgg att gag	ccc ccc acg agc tat gtc tct	4029
Ala Glu Ile Val	Ser Arg Ile Glu	Pro Pro Thr Ser Tyr Val Ser	
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Asp Gly Cys Ala	Asp Gly Glu Glu	Ser Asp Cys Leu Thr Glu Tyr	
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Glu Glu Asp Ala	Gly Pro Asp Cys	Ser Arg Asp Glu Gly Gly Ser	
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ccc gag ggc gca	agc ccc agc act	gcc tcc gag atg gag gag gag	4164
Pro Glu Gly Ala	Ser Pro Ser Thr	Ala Ser Glu Met Glu Glu Glu	
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Lys Ser Ile Leu	Arg Gln Arg Arg	Cys Leu Pro Gln Glu Pro Pro	
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Gly Ser Ala Thr	Asp Ala		
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5189-2.ST25.txt

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 35 40 45
 Arg Phe Arg Lys Arg Asp Lys Val Leu Phe Tyr Gly Arg Lys Ile Met
 50 55 60
 Arg Lys Val Ser Gln Ser Thr Ser Ser Leu Val Asp Thr Ser Val Ser
 65 70 75 80
 Ala Thr Ser Arg Pro Arg Met Arg Lys Lys Leu Lys Met Leu Asn Ile
 85 90 95
 Ala Lys Lys Ile Leu Arg Ile Gln Lys Glu Thr Pro Thr Leu Gln Arg
 100 105 110
 Lys Glu Pro Pro Pro Ala Val Leu Glu Ala Asp Leu Thr Glu Gly Asp
 115 120 125
 Leu Ala Asn Ser His Leu Pro Ser Glu Val Leu Tyr Met Leu Lys Asn
 130 135 140
 Val Arg Val Leu Gly His Phe Glu Lys Pro Leu Phe Leu Glu Leu Cys
 145 150 155 160
 Arg His Met Val Phe Gln Arg Leu Gly Gln Gly Asp Tyr Val Phe Arg
 165 170 175
 Pro Gly Gln Pro Asp Ala Ser Ile Tyr Val Val Gln Asp Gly Leu Leu
 180 185 190
 Glu Leu Cys Leu Pro Gly Pro Asp Gly Lys Glu Cys Val Val Lys Glu
 195 200 205
 Val Val Pro Gly Asp Ser Val Asn Ser Leu Leu Ser Ile Leu Asp Val
 210 215 220
 Ile Thr Gly His Gln His Pro Gln Arg Thr Val Ser Ala Arg Ala Ala
 225 230 235 240
 Arg Asp Ser Thr Val Leu Arg Leu Pro Val Glu Ala Phe Ser Ala Val
 245 250 255

5189-2.ST25.txt

Phe Thr Lys Tyr Pro Glu Ser Leu Val Arg Val Val Gln Ile Ile Met
 260 265 270
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 275 280 285
 Leu Thr Asn Glu Leu Phe Ser His Glu Ile Gln Pro Leu Arg Leu Phe
 290 295 300
 Pro Ser Pro Gly Leu Pro Thr Arg Thr Ser Pro Val Arg Gly Ser Lys
 305 310 315 320
 Arg Met Val Ser Thr Ser Ala Thr Asp Glu Pro Arg Glu Thr Pro Gly
 325 330 335
 Arg Pro Pro Asp Pro Thr Gly Ala Pro Leu Pro Gly Pro Thr Gly Asp
 340 345 350
 Pro Val Lys Pro Thr Ser Leu Glu Thr Pro Ser Pro Pro Leu Leu Ser
 355 360 365
 Arg Cys Val Ser Met Pro Gly Asp Ile Ser Gly Leu Gln Gly Gly Pro
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 Arg Ser Asp Phe Asp Met Ala Tyr Glu Arg Gly Arg Ile Ser Val Ser
 385 390 395 400
 Leu Gln Glu Glu Ala Ser Gly Gly Ser Leu Ala Ala Pro Ala Arg Thr
 405 410 415
 Pro Thr Gln Glu Pro Arg Glu Gln Pro Ala Gly Ala Cys Glu Tyr Ser
 420 425 430
 Tyr Cys Glu Asp Glu Ser Ala Thr Gly Gly Cys Pro Phe Gly Pro Tyr
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 Gln Gly Arg Gln Thr Ser Ser Ile Phe Glu Ala Ala Lys Gln Glu Leu
 450 455 460
 Ala Lys Leu Met Arg Ile Glu Asp Pro Ser Leu Leu Asn Ser Arg Val
 465 470 475 480
 Leu Leu His His Ala Lys Ala Gly Thr Ile Ile Ala Arg Gln Gly Asp
 485 490 495
 Gln Asp Val Ser Leu His Phe Val Leu Trp Gly Cys Leu His Val Tyr
 500 505 510

5189-2.ST25.txt

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 545 550 555 560
 Lys Ser Asp Phe Tyr Glu Ile Met Arg Ala Gln Pro Ser Val Val Leu
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 Ser Ala Ala His Thr Val Ala Ala Arg Met Ser Pro Phe Val Arg Gln
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 Met Asp Phe Ala Ile Asp Trp Thr Ala Val Glu Ala Gly Arg Ala Leu
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 Gly Glu Tyr Gly Arg Gly Asp Leu Ile Gly Val Val Glu Ala Leu Thr
 645 650 655
 Arg Gln Pro Arg Ala Thr Thr Val His Ala Val Arg Asp Thr Glu Leu
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 Ala Lys Leu Pro Glu Gly Thr Leu Gly His Ile Lys Arg Arg Tyr Pro
 675 680 685
 Gln Val Val Thr Arg Leu Ile His Leu Leu Ser Gln Lys Ile Leu Gly
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 Asn Leu Gln Gln Leu Gln Gly Pro Phe Pro Ala Gly Ser Gly Leu Gly
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 Val Pro Pro His Ser Glu Leu Thr Asn Pro Ala Ser Asn Leu Ala Thr
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 Val Ala Ile Leu Pro Val Cys Ala Glu Val Pro Met Val Ala Phe Thr
 740 745 750
 Leu Glu Leu Gln His Ala Leu Gln Ala Ile Gly Pro Thr Leu Leu Leu
 755 760 765

5189-2.ST25.txt

Asn Ser Asp Ile Ile Arg Ala Arg Leu Gly Ala Ser Ala Leu Asp Ser
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 Ile Gln Glu Phe Arg Leu Ser Gly Trp Leu Ala Gln Gln Glu Asp Ala
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 His Arg Ile Val Leu Tyr Gln Thr Asp Ala Ser Leu Thr Pro Trp Thr
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 Val Arg Cys Leu Arg Gln Ala Asp Cys Ile Leu Ile Val Gly Leu Gly
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 Asp Gln Glu Pro Thr Leu Gly Gln Leu Glu Gln Met Leu Glu Asn Thr
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 Ser Gly His Leu His Leu Arg Cys Pro Arg Arg Leu Phe Ser Arg Arg
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 Ser Pro Ala Lys Leu His Glu Leu Tyr Glu Lys Val Phe Ser Arg Arg
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 Asn Thr Ile Ala Leu Val Leu Gly Gly Gly Gly Ala Arg Gly Cys Ser
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 His Ile Gly Val Leu Lys Ala Leu Glu Glu Ala Gly Val Pro Val Asp
 945 950 955 960
 Leu Val Gly Gly Thr Ser Ile Gly Ser Phe Ile Gly Ala Leu Tyr Ala
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 980 985 990
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 995 1000 1005
 Val Thr Ser Met Phe Thr Gly Ser Ala Phe Asn Arg Ser Ile His
 1010 1015 1020

5189-2.ST25.txt

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 Ser Gly Tyr Leu Pro Pro Leu Cys Asp Pro Lys Asp Gly His Leu
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 Leu Met Asp Gly Gly Tyr Ile Asn Asn Leu Pro Ala Asp Ile Ala
 1085 1090 1095
 Arg Ser Met Gly Ala Lys Thr Val Ile Ala Ile Asp Val Gly Ser
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 Gln Asp Glu Thr Asp Leu Ser Thr Tyr Gly Asp Ser Leu Ser Gly
 1115 1120 1125
 Trp Trp Leu Leu Trp Lys Arg Leu Asn Pro Trp Ala Asp Lys Val
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 Ser Cys Val Arg Gln Leu Glu Val Val Lys Ser Ser Ser Tyr Cys
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 Gly Lys Phe Asp Gln Ile Tyr Asp Val Gly Tyr Gln Tyr Gly Lys
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5189-2.ST25.txt

Cys Ala Asp Gly Glu Glu Ser Asp Cys Leu Thr Glu Tyr Glu Glu
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1325

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5189-2.ST25.txt

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Asp	Leu	Glu	Trp	Arg	Gln	Gly	Arg	Met	Ala	Arg	Ile	Ile	Leu	
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5189-2.ST25.txt

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Ser	Leu	Arg	Ser	Arg	Thr	Pro	Met	Ile	Thr	Pro	Asp	Leu	Glu	Ser	Gly	
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cta	ctg	gcc	acc	aag	ggc	aca	ctg	cag	aag	ttt	gtg	gac	gac	ctg	ttt	2286
Leu	Leu	Ala	Thr	Lys	Gly	Thr	Leu	Gln	Lys	Phe	Val	Asp	Asp	Leu	Phe	
			300					305					310			
gag	acc	atc	ttc	agc	acg	gca	cac	cgg	ggc	tca	gcc	ctg	ccg	ctg	gcc	2334
Glu	Thr	Ile	Phe	Ser	Thr	Ala	His	Arg	Gly	Ser	Ala	Leu	Pro	Leu	Ala	
		315					320					325				
atc	aag	tac	atg	ttc	gac	ttc	ctg	gat	gag	cag	gcc	gac	aag	cac	cag	2382
Ile	Lys	Tyr	Met	Phe	Asp	Phe	Leu	Asp	Glu	Gln	Ala	Asp	Lys	His	Gln	
	330					335					340					
atc	cac	gat	gct	gac	gtg	cgc	cac	acc	tgg	aag	agc	aac	tgc	ctg	ccc	2430
Ile	His	Asp	Ala	Asp	Val	Arg	His	Thr	Trp	Lys	Ser	Asn	Cys	Leu	Pro	
345					350					355					360	
ctg	cgc	ttc	tgg	gtg	aac	gtg	atc	aag	aac	cca	cag	ttt	gtg	ttc	gac	2478
Leu	Arg	Phe	Trp	Val	Asn	Val	Ile	Lys	Asn	Pro	Gln	Phe	Val	Phe	Asp	
				365					370					375		
att	cac	aag	aac	agc	acc	acg	gac	gcc	tgc	ttg	tcg	gtg	gtg	gcc	cag	2526
Ile	His	Lys	Asn	Ser	Thr	Thr	Asp	Ala	Cys	Leu	Ser	Val	Val	Ala	Gln	
			380					385					390			
acc	ttc	atg	gac	tcc	tgc	tcc	acc	tct	gag	cac	aag	ctg	ggc	aag	gac	2574
Thr	Phe	Met	Asp	Ser	Cys	Ser	Thr	Ser	Glu	His	Lys	Leu	Gly	Lys	Asp	
		395					400					405				
tca	ccc	tcc	aac	aag	ctg	ctc	tac	gcc	aag	gac	atc	ccc	aac	tac	aag	2622
Ser	Pro	Ser	Asn	Lys	Leu	Leu	Tyr	Ala	Lys	Asp	Ile	Pro	Asn	Tyr	Lys	
	410					415					420					
agc	tgg	gtg	gag	agg	tac	tat	gca	gac	atc	gcc	aag	atg	cca	gcc	atc	2670
Ser	Trp	Val	Glu	Arg	Tyr	Tyr	Ala	Asp	Ile	Ala	Lys	Met	Pro	Ala	Ile	
425					430					435					440	
agc	gac	cag	gac	atg	agt	gcg	tat	ctg	gct	gag	cag	tcc	cgc	ctg	cac	2718
Ser	Asp	Gln	Asp	Met	Ser	Ala	Tyr	Leu	Ala	Glu	Gln	Ser	Arg	Leu	His	
				445					450					455		
ctg	agc	cag	ttc	aac	agc	atg	agc	gcc	ttg	cac	gag	atc	tac	tcc	tac	2766
Leu	Ser	Gln	Phe	Asn	Ser	Met	Ser	Ala	Leu	His	Glu	Ile	Tyr	Ser	Tyr	

5189-2.ST25.txt

460	465	470	
atc acc aag tac aag gat gag Ile Thr Lys Tyr Lys Asp Glu	atc ctg gca gcc ctg gag aag gat gag Ile Leu Ala Ala Leu Glu Lys Asp Glu		2814
475	480	485	
cag gcg cgg cgg cag cgg ctg cgg agc aag ctg gag cag gtg gtg gac Gln Ala Arg Arg Gln Arg Leu Arg Ser Lys Leu Glu Gln Val Val Asp			2862
490	495	500	
acg atg gcc ctg agc agc tga gccccagctg tgatcatcca gcatgatgca Thr Met Ala Leu Ser Ser			2913
505	510		
gcgtgaggac agctgagcag ggaccgggac agccctcacc gcatgcgtgt ggagtgtccg			2973
gtggtgctcg ggccgccgca gtgcagcgac tgcccggccc tccctcccct gcctcaccg			3033
gtcgggtccc ggctcttcct gtgtggaggt gatggtacct gccacaccac agctgcgcac			3093
acagctgctt gctcaggggc cgggacagca ctgggtgctc aggctggcca aggaccttca			3153
ttgcctggca agagctgccc agtggccttc atgggagaag ggctgacctc tgaggggctg			3213
aggggtgagg ccagggccct ccagggggag gggtagccag cttgggctgt ccccttgaga			3273
ccaggacaag aggctggggg tgtcagcatt cccagctttc caagctgccc ccaggcggca			3333
gagtctgagg gtcccggggc ccggttgga gctggagaaa gaggcaaaaa gcccgtagcc			3393
gggcaagagg agtcaagtc ggtctgggcc cgttgccacc gactcccacc tccagacccc			3453
atgcccgtg caccgtgcc atcctcagat tcaccgctg ctctgcgcgg ccgaggccgg			3513
agcaccacat ccacctcgcc ccagagaggc tctgctccct cctatggagg ggctgtgggc			3573
caggctgctc agactcctgg gtggcttcca gacggaccgg gcagcccctc tccgtcctca			3633
gggctgtgcc tctgggagcc actgggccag gggccccggg tcgcagagag cacgttccccg			3693
ttattttattc cctccgcgt cctacacagg ctgccctggc agctgtcttc aagggtaggc			3753
tgagctcccc accctggagc ccctgagggc ggcccctgag cactcctctc tctccactct			3813
ctctgtccct gcccagcgg cttccagtgt ggcattctcag cagtgtcctg gcccctccag			3873
agcagtggga catctgggga ctgtttttgt gtttagggga aaaaattctg ctgcactctg			3933
cttgggcctt gaggtctgtg gcagggctcc tctggccgc agtggcctgg atctatctgg			3993
gccatgagtg acgggcagtg accagaggga ctggaggcca gcggtgtcca cccttgccct			4053
cagcaagaga gaatgcattc ttaaaagaaa gctgtacatg tatatatatg catatatata			4113
tatgtggctc tagcctcagg ctccagcccc agtgggggtac tgtacagtta actgaagaag			4173
aattttaaag acgatttgaa caagaaaatg aaggcagtgg gaaagcaatg ccaaatgggt			4233
gtggagaaaag tggccggagc ctccctggag tggagcagcc ctgaagcctg tgccccccga			4293
cctgcgggcc gctgttttgg ttgacatga caaggaaaagg acttcctgct gaccctgaga			4353
gcctctgggg tgccgcggca ccacggggca tgcattgattg tgctagcgtt tagtctgagt			4413

tgatcttttt aaaactgcaa gtgttgaata ct

4445

<210> 60
 <211> 510
 <212> PRT
 <213> Homo sapiens

<400> 60

Met Val Gly Met Phe Cys Phe Leu Ile Phe Leu Gln Ser Leu Leu Gly
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Phe Gly Thr Lys Ala Val Leu Ala Ser Gln Arg Val Gly Lys Cys Cys
 20 25 30

Ser Phe Leu Leu Ala Arg Asn Thr Met Ala Gly Thr Arg Arg Val Glu
 35 40 45

Gly Gln Val Gly Gly Arg Pro Gly Gly Pro Gly Cys Ser Leu Met Pro
 50 55 60

Pro Pro Pro Gln Glu Cys Ala Gly Glu Pro Leu Phe Met Leu Tyr Cys
 65 70 75 80

Ala Ile Lys Gln Gln Met Glu Lys Gly Pro Ile Asp Ala Ile Thr Gly
 85 90 95

Glu Ala Arg Tyr Ser Leu Ser Glu Asp Lys Leu Ile Arg Gln Gln Ile
 100 105 110

Asp Tyr Lys Thr Leu Thr Leu Asn Cys Val Asn Pro Glu Asn Glu Asn
 115 120 125

Ala Pro Glu Val Pro Val Lys Gly Leu Asp Cys Asp Thr Val Thr Gln
 130 135 140

Ala Lys Glu Lys Leu Leu Asp Ala Ala Tyr Lys Gly Val Pro Tyr Ser
 145 150 155 160

Gln Arg Pro Lys Ala Ala Asp Met Asp Leu Glu Trp Arg Gln Gly Arg
 165 170 175

Met Ala Arg Ile Ile Leu Gln Asp Glu Asp Val Thr Thr Lys Ile Asp
 180 185 190

Asn Asp Trp Lys Arg Leu Asn Thr Leu Ala His Tyr Gln Val Thr Asp
 195 200 205

Gly Ser Ser Val Ala Leu Val Pro Lys Gln Thr Ser Ala Tyr Asn Ile
 210 215 220

5189-2.ST25.txt

Ser Asn Ser Ser Thr Phe Thr Lys Ser Leu Ser Arg Tyr Glu Ser Met
 225 230 235 240
 Leu Arg Thr Ala Ser Ser Pro Asp Ser Leu Arg Ser Arg Thr Pro Met
 245 250 255
 Ile Thr Pro Asp Leu Glu Ser Gly Thr Lys Leu Trp His Leu Val Lys
 260 265 270
 Asn His Asp His Leu Asp Gln Arg Glu Gly Asp Arg Gly Ser Lys Met
 275 280 285
 Val Ser Glu Ile Tyr Leu Thr Arg Leu Leu Ala Thr Lys Gly Thr Leu
 290 295 300
 Gln Lys Phe Val Asp Asp Leu Phe Glu Thr Ile Phe Ser Thr Ala His
 305 310 315 320
 Arg Gly Ser Ala Leu Pro Leu Ala Ile Lys Tyr Met Phe Asp Phe Leu
 325 330 335
 Asp Glu Gln Ala Asp Lys His Gln Ile His Asp Ala Asp Val Arg His
 340 345 350
 Thr Trp Lys Ser Asn Cys Leu Pro Leu Arg Phe Trp Val Asn Val Ile
 355 360 365
 Lys Asn Pro Gln Phe Val Phe Asp Ile His Lys Asn Ser Thr Thr Asp
 370 375 380
 Ala Cys Leu Ser Val Val Ala Gln Thr Phe Met Asp Ser Cys Ser Thr
 385 390 395 400
 Ser Glu His Lys Leu Gly Lys Asp Ser Pro Ser Asn Lys Leu Leu Tyr
 405 410 415
 Ala Lys Asp Ile Pro Asn Tyr Lys Ser Trp Val Glu Arg Tyr Tyr Ala
 420 425 430
 Asp Ile Ala Lys Met Pro Ala Ile Ser Asp Gln Asp Met Ser Ala Tyr
 435 440 445
 Leu Ala Glu Gln Ser Arg Leu His Leu Ser Gln Phe Asn Ser Met Ser
 450 455 460
 Ala Leu His Glu Ile Tyr Ser Tyr Ile Thr Lys Tyr Lys Asp Glu Ile
 465 470 475 480

5189-2.ST25.txt

Leu Ala Ala Leu Glu Lys Asp Glu Gln Ala Arg Arg Gln Arg Leu Arg
 485 490 495

Ser Lys Leu Glu Gln Val Val Asp Thr Met Ala Leu Ser Ser
 500 505 510

<210> 61
 <211> 1440
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(1332)
 <223>

<400> 61
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 Asp Ser Leu His Lys Ala Pro Lys Lys Lys Ser Ile Lys Ser Ser Ile
 1 5 10 15
 ggc cgt ctc ttt ggc aag aaa gag aag gga cga atg gga ccc cca ggc 96
 Gly Arg Leu Phe Gly Lys Lys Glu Lys Gly Arg Met Gly Pro Pro Gly
 20 25 30
 cgg gac agc tct tct ctg gct gga aca ccc tca gat gag aca ctg gcc 144
 Arg Asp Ser Ser Ser Leu Ala Gly Thr Pro Ser Asp Glu Thr Leu Ala
 35 40 45
 act gac cct ctg ggg cta gcc aag ctg aca ggc cca gga gac aag gac 192
 Thr Asp Pro Leu Gly Leu Ala Lys Leu Thr Gly Pro Gly Asp Lys Asp
 50 55 60
 cga agg aac aag agg aag cat gaa ctc ctg gag gag gcc tgc cgc cag 240
 Arg Arg Asn Lys Arg Lys His Glu Leu Leu Glu Glu Ala Cys Arg Gln
 65 70 75 80
 ggc cta cct ttt gct gcc tgg gac ggg ccc acc gtg gtg tcc tgg ctg 288
 Gly Leu Pro Phe Ala Ala Trp Asp Gly Pro Thr Val Val Ser Trp Leu
 85 90 95
 gag ctg tgg gtg ggc atg cct gcc tgg tat gtg gcc gcc tgc cgg gcc 336
 Glu Leu Trp Val Gly Met Pro Ala Trp Tyr Val Ala Ala Cys Arg Ala
 100 105 110
 aat gtc aag agc ggt gcc atc atg gcc aac ctg tca gac acg aag atc 384
 Asn Val Lys Ser Gly Ala Ile Met Ala Asn Leu Ser Asp Thr Lys Ile
 115 120 125
 cag cgc gag atc ggc atc agc aac ccg ctg cac cga ctc aag cta cgc 432
 Gln Arg Glu Ile Gly Ile Ser Asn Pro Leu His Arg Leu Lys Leu Arg
 130 135 140
 ctc gcc atc cag gag atg gtc tcg ctc acc tcg ccc tca gcc ccc gcc 480
 Leu Ala Ile Gln Glu Met Val Ser Leu Thr Ser Pro Ser Ala Pro Ala
 145 150 155 160
 tcc tcc cgc act tcc aca gga aac gtg tgg atg aca cac gag gag atg 528
 Ser Ser Arg Thr Ser Thr Gly Asn Val Trp Met Thr His Glu Glu Met
 165 170 175
 gag tcc ctt acg gcc acg acc aag ccc gag acc aag gag atc agc tgg 576

5189-2.ST25.txt

Glu	Ser	Leu	Thr	Ala	Thr	Thr	Lys	Pro	Glu	Thr	Lys	Glu	Ile	Ser	Trp		
			180					185					190				
gag	cag	atc	ctg	gca	tat	ggc	gac	atg	aac	cac	gag	tgg	gtg	ggg	aac		624
Glu	Gln	Ile	Leu	Ala	Tyr	Gly	Asp	Met	Asn	His	Glu	Trp	Val	Gly	Asn		
		195					200					205					
gac	tgg	ctg	ccc	agc	ctg	ggg	ctg	ccc	caa	tac	cgc	agc	tac	ttc	atg		672
Asp	Trp	Leu	Pro	Ser	Leu	Gly	Leu	Pro	Gln	Tyr	Arg	Ser	Tyr	Phe	Met		
	210					215					220						
gag	tcg	ctg	gtg	gac	gct	cga	atg	tta	gat	cac	ctt	aac	aag	aag	gag		720
Glu	Ser	Leu	Val	Asp	Ala	Arg	Met	Leu	Asp	His	Leu	Asn	Lys	Lys	Glu		
225					230					235					240		
ctc	cgg	ggc	caa	ctc	aag	atg	gtg	gac	agc	ttt	cac	agg	gtg	agt	cta		768
Leu	Arg	Gly	Gln	Leu	Lys	Met	Val	Asp	Ser	Phe	His	Arg	Val	Ser	Leu		
				245					250					255			
cat	tat	gga	gtt	atg	tgc	ctg	aaa	cgg	ctc	aac	tat	gac	cgg	aag	gac		816
His	Tyr	Gly	Val	Met	Cys	Leu	Lys	Arg	Leu	Asn	Tyr	Asp	Arg	Lys	Asp		
			260					265					270				
ctg	gag	cgg	agg	cgg	gaa	gaa	agt	cag	acc	cag	atc	cga	gac	gtg	atg		864
Leu	Glu	Arg	Arg	Arg	Glu	Glu	Ser	Gln	Thr	Gln	Ile	Arg	Asp	Val	Met		
		275					280					285					
gtg	tgg	tcc	aat	gag	cgg	gtc	atg	ggt	tgg	gtg	tcc	ggg	ctg	ggc	ctg		912
Val	Trp	Ser	Asn	Glu	Arg	Val	Met	Gly	Trp	Val	Ser	Gly	Leu	Gly	Leu		
	290					295					300						
aag	gaa	ttt	gcc	acg	aac	ctc	acg	gag	agc	ggg	gta	cac	ggg	gca	ctg		960
Lys	Glu	Phe	Ala	Thr	Asn	Leu	Thr	Glu	Ser	Gly	Val	His	Gly	Ala	Leu		
305					310					315					320		
ctc	gcc	ctg	gac	gag	acc	ttc	gac	tac	tcc	gac	ctg	gcc	ttg	ctc	ctg		1008
Leu	Ala	Leu	Asp	Glu	Thr	Phe	Asp	Tyr	Ser	Asp	Leu	Ala	Leu	Leu	Leu		
				325					330					335			
cag	atc	ccc	acg	cag	aat	gca	cag	gcc	cgg	cag	ctt	ctg	gag	aag	gaa		1056
Gln	Ile	Pro	Thr	Gln	Asn	Ala	Gln	Ala	Arg	Gln	Leu	Leu	Glu	Lys	Glu		
			340					345					350				
ttc	agc	aac	ctt	atc	tcc	tta	ggc	aca	gac	agg	cgg	ctg	gac	gag	gac		1104
Phe	Ser	Asn	Leu	Ile	Ser	Leu	Gly	Thr	Asp	Arg	Arg	Leu	Asp	Glu	Asp		
		355					360					365					
agc	gcc	aag	tct	ttc	agc	cgc	tcc	cca	tcc	tgg	cgg	aag	atg	ttc	cgg		1152
Ser	Ala	Lys	Ser	Phe	Ser	Arg	Ser	Pro	Ser	Trp	Arg	Lys	Met	Phe	Arg		
	370					375					380						
gag	aag	gac	ctc	cga	ggc	gta	act	ccc	gac	tca	gct	gag	atg	ttg	ccc		1200
Glu	Lys	Asp	Leu	Arg	Gly	Val	Thr	Pro	Asp	Ser	Ala	Glu	Met	Leu	Pro		
385					390					395					400		
ccc	aac	ttt	cgt	tcg	gct	gca	gcg	gga	gcc	ctg	ggc	tct	ccg	ggg	ctc		1248
Pro	Asn	Phe	Arg	Ser	Ala	Ala	Ala	Gly	Ala	Leu	Gly	Ser	Pro	Gly	Leu		
				405					410					415			
cct	ctc	cgc	aag	ctg	cag	cca	gaa	ggc	cag	act	tct	ggg	agt	tcc	cgg		1296
Pro	Leu	Arg	Lys	Leu	Gln	Pro	Glu	Gly	Gln	Thr	Ser	Gly	Ser	Ser	Arg		
			420					425					430				
gca	gac	ggc	gtt	tcg	gtc	cgg	acc	tat	tcc	tgc	tag	tg	cagg	cctc			1342

5189-2.ST25.txt

Ala Asp Gly Val Ser Val Arg Thr Tyr Ser Cys
435 440

caggtgacct cactcggacg gaagaatctt cccgaggctg ggctgttccc tctcctgccc 1402
ggactgtggc ctcgccgggg agagcgggagc gggagctc 1440

<210> 62
<211> 443
<212> PRT
<213> Homo sapiens
<400> 62

Asp Ser Leu His Lys Ala Pro Lys Lys Lys Ser Ile Lys Ser Ser Ile
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Gly Arg Leu Phe Gly Lys Lys Glu Lys Gly Arg Met Gly Pro Pro Gly
20 25 30

Arg Asp Ser Ser Ser Leu Ala Gly Thr Pro Ser Asp Glu Thr Leu Ala
35 40 45

Thr Asp Pro Leu Gly Leu Ala Lys Leu Thr Gly Pro Gly Asp Lys Asp
50 55 60

Arg Arg Asn Lys Arg Lys His Glu Leu Leu Glu Glu Ala Cys Arg Gln
65 70 75 80

Gly Leu Pro Phe Ala Ala Trp Asp Gly Pro Thr Val Val Ser Trp Leu
85 90 95

Glu Leu Trp Val Gly Met Pro Ala Trp Tyr Val Ala Ala Cys Arg Ala
100 105 110

Asn Val Lys Ser Gly Ala Ile Met Ala Asn Leu Ser Asp Thr Lys Ile
115 120 125

Gln Arg Glu Ile Gly Ile Ser Asn Pro Leu His Arg Leu Lys Leu Arg
130 135 140

Leu Ala Ile Gln Glu Met Val Ser Leu Thr Ser Pro Ser Ala Pro Ala
145 150 155 160

Ser Ser Arg Thr Ser Thr Gly Asn Val Trp Met Thr His Glu Glu Met
165 170 175

Glu Ser Leu Thr Ala Thr Thr Lys Pro Glu Thr Lys Glu Ile Ser Trp
180 185 190

Glu Gln Ile Leu Ala Tyr Gly Asp Met Asn His Glu Trp Val Gly Asn

195 200 205
 Asp Trp Leu Pro Ser Leu Gly Leu Pro Gln Tyr Arg Ser Tyr Phe Met
 210 215 220
 Glu Ser Leu Val Asp Ala Arg Met Leu Asp His Leu Asn Lys Lys Glu
 225 230 235 240
 Leu Arg Gly Gln Leu Lys Met Val Asp Ser Phe His Arg Val Ser Leu
 245 250 255
 His Tyr Gly Val Met Cys Leu Lys Arg Leu Asn Tyr Asp Arg Lys Asp
 260 265 270
 Leu Glu Arg Arg Arg Glu Glu Ser Gln Thr Gln Ile Arg Asp Val Met
 275 280 285
 Val Trp Ser Asn Glu Arg Val Met Gly Trp Val Ser Gly Leu Gly Leu
 290 295 300
 Lys Glu Phe Ala Thr Asn Leu Thr Glu Ser Gly Val His Gly Ala Leu
 305 310 315 320
 Leu Ala Leu Asp Glu Thr Phe Asp Tyr Ser Asp Leu Ala Leu Leu Leu
 325 330 335
 Gln Ile Pro Thr Gln Asn Ala Gln Ala Arg Gln Leu Leu Glu Lys Glu
 340 345 350
 Phe Ser Asn Leu Ile Ser Leu Gly Thr Asp Arg Arg Leu Asp Glu Asp
 355 360 365
 Ser Ala Lys Ser Phe Ser Arg Ser Pro Ser Trp Arg Lys Met Phe Arg
 370 375 380
 Glu Lys Asp Leu Arg Gly Val Thr Pro Asp Ser Ala Glu Met Leu Pro
 385 390 395 400
 Pro Asn Phe Arg Ser Ala Ala Ala Gly Ala Leu Gly Ser Pro Gly Leu
 405 410 415
 Pro Leu Arg Lys Leu Gln Pro Glu Gly Gln Thr Ser Gly Ser Ser Arg
 420 425 430
 Ala Asp Gly Val Ser Val Arg Thr Tyr Ser Cys
 435 440

<210> 63

<211> 2807
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (59)..(1792)
 <223>

<400> 63
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 atg gag ggc tct ggg ggc ggt gcg ggc gag cgg gcg ccg ctg ctg ggc 106
 Met Glu Gly Ser Gly Gly Gly Ala Gly Glu Arg Ala Pro Leu Leu Gly 15
 1 5 10 15
 gcg cgg cgg gcg gcg gcg gcc gcg gcg gcg gct ggg gcg ttc gcg ggc 154
 Ala Arg Arg Ala Ala Ala Ala Ala Ala Ala Ala Gly Ala Phe Ala Gly 20 25 30
 cgg cgc gcg gcg tgc ggg gcc gtg ctg ctg acg gag ctg ctg gag cgc 202
 Arg Arg Ala Ala Cys Gly Ala Val Leu Leu Thr Glu Leu Leu Glu Arg 35 40 45
 gcc gct ttc tac ggc atc acg tcc aac ctg gtg cta ttc ctg aac ggg 250
 Ala Ala Phe Tyr Gly Ile Thr Ser Asn Leu Val Leu Phe Leu Asn Gly 50 55 60
 gcg ccg ttc tgc tgg gag ggc gcg cag gcc agc gag gcg ctg ctg ctc 298
 Ala Pro Phe Cys Trp Glu Gly Ala Gln Ala Ser Glu Ala Leu Leu Leu 65 70 75 80
 ttc atg ggc ctc acc tac ctg ggc tcg ccg ttc gga ggc tgg ctg gcc 346
 Phe Met Gly Leu Thr Tyr Leu Gly Ser Pro Phe Gly Gly Trp Leu Ala 85 90 95
 gac gcg cgg ctg ggc cgg gcg cgc gcc atc ctg ctg agc ctg gcg ctc 394
 Asp Ala Arg Leu Gly Arg Ala Arg Ala Ile Leu Leu Ser Leu Ala Leu 100 105 110
 tac ctg ctg ggc atg ctg gcc ttc ccg ctg ctg gcc gcg ccc gcc acg 442
 Tyr Leu Leu Gly Met Leu Ala Phe Pro Leu Leu Ala Ala Pro Ala Thr 115 120 125
 cga gcc gcg ctc tgc ggt tcc gcg cgc ctg ctc aac tgc acg gcg cct 490
 Arg Ala Ala Leu Cys Gly Ser Ala Arg Leu Leu Asn Cys Thr Ala Pro 130 135 140
 ggt ccc gac gcc gcc gcc cgc tgc tgc tca ccg gcc acc ttc gcg ggg 538
 Gly Pro Asp Ala Ala Ala Arg Cys Cys Ser Pro Ala Thr Phe Ala Gly 145 150 155 160
 ctg gtg ctg gtg ggc ctg ggc gtg gcc acc gtc aag gcc aac atc acg 586
 Leu Val Leu Val Gly Leu Gly Val Ala Thr Val Lys Ala Asn Ile Thr 165 170 175
 ccc ttc ggc gcc gac cag gtt aaa gat cga ggt ccg gaa gcc act agg 634
 Pro Phe Gly Ala Asp Gln Val Lys Asp Arg Gly Pro Glu Ala Thr Arg 180 185 190
 aga ttt ttt aat tgg ttt tat tgg agc att aac ctg gga gcg atc ctg 682
 Arg Phe Phe Asn Trp Phe Tyr Trp Ser Ile Asn Leu Gly Ala Ile Leu 195 200 205

5189-2.ST25.txt

tcg Ser	tta Leu 210	ggt Gly	ggc Gly	att Ile	gcc Ala	tat Tyr 215	att Ile	cag Gln	cag Gln	aac Asn	gtc Val 220	agc Ser	ttt Phe	gtc Val	act Thr	730
ggt Gly 225	tat Tyr	gcg Ala	atc Ile	ccc Pro	act Thr 230	gtc Val	tgc Cys	gtc Val	ggc Gly	ctt Leu 235	gct Ala	ttt Phe	gtg Val	gtc Val	ttc Phe 240	778
ctc Leu	tgt Cys	ggc Gly	cag Gln	agc Ser 245	gtt Val	ttc Phe	atc Ile	acc Thr	aag Lys 250	cct Pro	cct Pro	gat Asp	ggc Gly	agt Ser 255	gcc Ala	826
ttc Phe	acc Thr	gac Asp	atg Met 260	ttc Phe	aag Lys	ata Ile	ctg Leu	acg Thr 265	tat Tyr	tcc Ser	tgc Cys	tgt Cys	tcc Ser 270	cag Gln	aag Lys	874
cga Arg	agt Ser	gga Gly 275	gag Glu	cgc Arg	cag Gln	agt Ser	aat Asn 280	ggt Gly	gaa Glu	ggc Gly	att Ile	gga Gly 285	gtc Val	ttt Phe	cag Gln	922
caa Gln	tct Ser 290	tct Ser	aaa Lys	caa Gln	agt Ser	ctg Leu 295	ttt Phe	gat Asp	tca Ser	tgt Cys	aag Lys 300	atg Met	tct Ser	cat His	ggt Gly	970
ggg Gly 305	cca Pro	ttt Phe	aca Thr	gaa Glu	gag Glu 310	aaa Lys	gtg Val	gaa Glu	gat Asp	gtg Val 315	aaa Lys	gct Ala	ctg Leu	gtc Val	aag Lys 320	1018
att Ile	gtc Val	cct Pro	gtt Val	ttc Phe 325	ttg Leu	gct Ala	ttg Leu	ata Ile	cct Pro 330	tac Tyr	tgg Trp	aca Thr	gtg Val	tat Tyr 335	ttc Phe	1066
caa Gln	atg Met	cag Gln	aca Thr 340	aca Thr	tat Tyr	gtt Val	tta Leu	cag Gln 345	agt Ser	ctt Leu	cat His	ttg Leu	agg Arg 350	att Ile	cca Pro	1114
gaa Glu	att Ile	tca Ser 355	aat Asn	att Ile	aca Thr	acc Thr	act Thr 360	cct Pro	cac His	acg Thr	ctc Leu	cct Pro 365	gca Ala	gcc Ala	tgg Trp	1162
ctg Leu	acc Thr 370	atg Met	ttt Phe	gat Asp	gct Ala	gtg Val 375	ctc Leu	atc Ile	ctc Leu	ctg Leu	ctc Leu 380	atc Ile	cct Pro	ctg Leu	aag Lys	1210
gac Asp 385	aaa Lys	ctg Leu	gtc Val	gat Asp	ccc Pro 390	att Ile	ttg Leu	aga Arg	aga Arg	cat His 395	ggc Gly	ctg Leu	ctc Leu	cca Pro	tcc Ser 400	1258
tcc Ser	ctg Leu	aag Lys	agg Arg	atc Ile 405	gcc Ala	gtg Val	ggc Gly	atg Met	ttc Phe 410	ttt Phe	gtc Val	atg Met	tgc Cys	tgc Ser 415	gcc Ala	1306
ttt Phe	gct Ala	gca Ala	gga Gly 420	att Ile	ttg Leu	gag Glu	agt Ser	aaa Lys 425	agg Arg	ctg Leu	aac Asn	ctt Leu	gtt Val 430	aaa Lys	gag Glu	1354
aaa Lys	acc Thr	att Ile 435	aat Asn	cag Gln	acc Thr	atc Ile	ggc Gly 440	aac Asn	gtc Val	gtc Val	tac Tyr	cat His 445	gct Ala	gcc Ala	gat Asp	1402
ctg Leu	tgc Ser 450	ctg Leu	tgg Trp	tgg Trp	cag Gln	gtg Val 455	ccg Pro	cag Gln	tac Tyr	ttg Leu	ctg Leu 460	att Ile	ggg Gly	atc Ile	agc Ser	1450

5189-2.ST25.txt

gag atc ttt gca agt atc gca ggc ctg gaa ttt gca tac tca gct gcc Glu Ile Phe Ala Ser Ile Ala Gly Leu Glu Phe Ala Tyr Ser Ala Ala 465 470 475 480	1498
ccc aag tcc atg cag agt gcc ata atg ggc ttg ttc ttt ttc ttc tct Pro Lys Ser Met Gln Ser Ala Ile Met Gly Leu Phe Phe Phe Phe Ser 485 490 495	1546
ggc gtc ggg tcc ttc gtg ggt tct gga ctg ctg gca ctg gtg tct atc Gly Val Gly Ser Phe Val Gly Ser Gly Leu Leu Ala Leu Val Ser Ile 500 505 510	1594
aaa gcc atc gga tgg atg agc agt cac aca gac ttt ggt aat att aac Lys Ala Ile Gly Trp Met Ser Ser His Thr Asp Phe Gly Asn Ile Asn 515 520 525	1642
ggc tgc tat ttg aac tat tac ttt ttt ctt ctg gct gct att caa gga Gly Cys Tyr Leu Asn Tyr Tyr Phe Phe Leu Leu Ala Ala Ile Gln Gly 530 535 540	1690
gct acc ctc ctg ctt ttc ctc att att tct gtg aaa tat gac cat cat Ala Thr Leu Leu Leu Phe Leu Ile Ile Ser Val Lys Tyr Asp His His 545 550 555 560	1738
cga gac cat cag cga tca aga gcc aat ggc gtg ccc acc agc agg agg Arg Asp His Gln Arg Ser Arg Ala Asn Gly Val Pro Thr Ser Arg Arg 565 570 575	1786
gcc tga ccttcctgag gccatgtgcg gtttctgagg ctgacatgtc agtaactgac Ala	1842
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acttgcattgt tgcctggatt gatttcttct ttccctctat ccaaaggagc ttggtaagtg	1962
ccttactgca gcgtgtctcc tggcacgctg ggccctccgg gaggagagct gcagatttctg	2022
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gaaactcaca aatggagatt gcaaagtctt ggggaactcc acgtgttagt tggcatccca	2142
gtttcttaaa caaatagtat cacctgcttc ccatagccat atctcactgt aaaaaaaaaa	2202
aattaataaa ctgttactta tatttaagaa agtgaggatt tttttttttt aaagataaaa	2262
gcatggtcag atgctgcaag gattttacat aaatgccata tttatggttt ctttcctgag	2322
aacagtcttg ctcttgccat gttctttgat ttaggctggg agtaaacaca tttcatctgc	2382
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actaaagact gatcatgggt gtatgtaagg aaaacattct tttgaacaga aatagtgtaa	2622
ttaaaaataa ttgaaagtgt taaatgtgaa cttgagctgt ttgaccagcc acatttttgt	2682
attgttactg tacgtgtatc tggggcttct ccgtttgtta atactttttc tgtatttgtt	2742
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aaaaa

<210> 64
 <211> 577
 <212> PRT
 <213> Homo sapiens

<400> 64

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Ala Arg Arg Ala Ala Ala Ala Ala Ala Ala Gly Ala Phe Ala Gly
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Arg Arg Ala Ala Cys Gly Ala Val Leu Leu Thr Glu Leu Leu Glu Arg
 35 40 45

Ala Ala Phe Tyr Gly Ile Thr Ser Asn Leu Val Leu Phe Leu Asn Gly
 50 55 60

Ala Pro Phe Cys Trp Glu Gly Ala Gln Ala Ser Glu Ala Leu Leu Leu
 65 70 75 80

Phe Met Gly Leu Thr Tyr Leu Gly Ser Pro Phe Gly Gly Trp Leu Ala
 85 90 95

Asp Ala Arg Leu Gly Arg Ala Arg Ala Ile Leu Leu Ser Leu Ala Leu
 100 105 110

Tyr Leu Leu Gly Met Leu Ala Phe Pro Leu Leu Ala Ala Pro Ala Thr
 115 120 125

Arg Ala Ala Leu Cys Gly Ser Ala Arg Leu Leu Asn Cys Thr Ala Pro
 130 135 140

Gly Pro Asp Ala Ala Ala Arg Cys Cys Ser Pro Ala Thr Phe Ala Gly
 145 150 155 160

Leu Val Leu Val Gly Leu Gly Val Ala Thr Val Lys Ala Asn Ile Thr
 165 170 175

Pro Phe Gly Ala Asp Gln Val Lys Asp Arg Gly Pro Glu Ala Thr Arg
 180 185 190

Arg Phe Phe Asn Trp Phe Tyr Trp Ser Ile Asn Leu Gly Ala Ile Leu
 195 200 205

Ser Leu Gly Gly Ile Ala Tyr Ile Gln Gln Asn Val Ser Phe Val Thr
 210 215 220

5189-2.ST25.txt

Gly Tyr Ala Ile Pro Thr Val Cys Val Gly Leu Ala Phe Val Val Phe
 225 230 235 240
 Leu Cys Gly Gln Ser Val Phe Ile Thr Lys Pro Pro Asp Gly Ser Ala
 245 250 255
 Phe Thr Asp Met Phe Lys Ile Leu Thr Tyr Ser Cys Cys Ser Gln Lys
 260 265 270
 Arg Ser Gly Glu Arg Gln Ser Asn Gly Glu Gly Ile Gly Val Phe Gln
 275 280 285
 Gln Ser Ser Lys Gln Ser Leu Phe Asp Ser Cys Lys Met Ser His Gly
 290 295 300
 Gly Pro Phe Thr Glu Glu Lys Val Glu Asp Val Lys Ala Leu Val Lys
 305 310 315 320
 Ile Val Pro Val Phe Leu Ala Leu Ile Pro Tyr Trp Thr Val Tyr Phe
 325 330 335
 Gln Met Gln Thr Thr Tyr Val Leu Gln Ser Leu His Leu Arg Ile Pro
 340 345 350
 Glu Ile Ser Asn Ile Thr Thr Thr Pro His Thr Leu Pro Ala Ala Trp
 355 360 365
 Leu Thr Met Phe Asp Ala Val Leu Ile Leu Leu Leu Ile Pro Leu Lys
 370 375 380
 Asp Lys Leu Val Asp Pro Ile Leu Arg Arg His Gly Leu Leu Pro Ser
 385 390 395 400
 Ser Leu Lys Arg Ile Ala Val Gly Met Phe Phe Val Met Cys Ser Ala
 405 410 415
 Phe Ala Ala Gly Ile Leu Glu Ser Lys Arg Leu Asn Leu Val Lys Glu
 420 425 430
 Lys Thr Ile Asn Gln Thr Ile Gly Asn Val Val Tyr His Ala Ala Asp
 435 440 445
 Leu Ser Leu Trp Trp Gln Val Pro Gln Tyr Leu Leu Ile Gly Ile Ser
 450 455 460
 Glu Ile Phe Ala Ser Ile Ala Gly Leu Glu Phe Ala Tyr Ser Ala Ala
 465 470 475 480

5189-2.ST25.txt

Pro Lys Ser Met Gln Ser Ala Ile Met Gly Leu Phe Phe Phe Phe Ser
485 490 495

Gly Val Gly Ser Phe Val Gly Ser Gly Leu Leu Ala Leu Val Ser Ile
500 505 510

Lys Ala Ile Gly Trp Met Ser Ser His Thr Asp Phe Gly Asn Ile Asn
515 520 525

Gly Cys Tyr Leu Asn Tyr Tyr Phe Phe Leu Leu Ala Ala Ile Gln Gly
530 535 540

Ala Thr Leu Leu Leu Phe Leu Ile Ile Ser Val Lys Tyr Asp His His
545 550 555 560

Arg Asp His Gln Arg Ser Arg Ala Asn Gly Val Pro Thr Ser Arg Arg
565 570 575

Ala

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<211> 1982
<212> DNA
<213> Homo sapiens

<220>
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<222> (63)..(1460)
<223>

<400> 65
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cc atg gga ggg gcc gtg gtg gac gag ggc ccc aca ggc gtc aag gcc 107
Met Gly Gly Ala Val Val Asp Glu Gly Pro Thr Gly Val Lys Ala
1 5 10 15
cct gac ggc ggc tgg ggc tgg gcc gtg ctc ttc ggc tgt ttc gtc atc 155
Pro Asp Gly Gly Trp Gly Trp Ala Val Leu Phe Gly Cys Phe Val Ile
20 25 30
act ggc ttc tcc tac gcc ttc ccc aag gcc gtc agt gtc ttc ttc aag 203
Thr Gly Phe Ser Tyr Ala Phe Pro Lys Ala Val Ser Val Phe Phe Lys
35 40 45
gag ctc ata cag gag ttt ggg atc ggc tac agc gac aca gcc tgg atc 251
Glu Leu Ile Gln Glu Phe Gly Ile Gly Tyr Ser Asp Thr Ala Trp Ile
50 55 60
tcc tcc atc ctg ctg gcc atg ctc tac ggg aca ggt ccg ctc tgc agt 299
Ser Ser Ile Leu Leu Ala Met Leu Tyr Gly Thr Gly Pro Leu Cys Ser
65 70 75
gtg tgc gtg aac cgc ttt ggc tgc cgg ccc gtc atg ctt gtg ggg ggt 347
Val Cys Val Asn Arg Phe Gly Cys Arg Pro Val Met Leu Val Gly Gly
80 85 90 95

5189-2.ST25.txt

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				100					105					110		
atc	cag	gtc	tac	ctc	acc	act	ggg	gtc	atc	acg	ggg	ttg	ggt	ttg	gca	443
Ile	Gln	Val	Tyr	Leu	Thr	Thr	Gly	Val	Ile	Thr	Gly	Leu	Gly	Leu	Ala	
			115					120					125			
ctc	aac	ttc	cag	ccc	tcg	ctc	atc	atg	ctg	aac	cgc	tac	ttc	agc	aag	491
Leu	Asn	Phe	Gln	Pro	Ser	Leu	Ile	Met	Leu	Asn	Arg	Tyr	Phe	Ser	Lys	
			130					135				140				
cgg	cgc	ccc	atg	gcc	aac	ggg	ctg	gcg	gca	gca	ggt	agc	cct	gtc	ttc	539
Arg	Arg	Pro	Met	Ala	Asn	Gly	Leu	Ala	Ala	Ala	Gly	Ser	Pro	Val	Phe	
			145			150					155					
ctg	tgt	gcc	ctg	agc	ccg	ctg	ggg	cag	ctg	ctg	cag	gac	cgc	tac	ggc	587
Leu	Cys	Ala	Leu	Ser	Pro	Leu	Gly	Gln	Leu	Leu	Gln	Asp	Arg	Tyr	Gly	
			160			165					170				175	
tgg	cgg	ggc	ggc	ttc	ctc	atc	ctg	ggc	ggc	ctg	ctg	ctc	aac	tgc	tgc	635
Trp	Arg	Gly	Gly	Phe	Leu	Ile	Leu	Gly	Gly	Leu	Leu	Leu	Asn	Cys	Cys	
				180					185					190		
gtg	tgt	gcc	gca	ctc	atg	agg	ccc	ctg	gtg	gtc	acg	gcc	cag	ccg	ggc	683
Val	Cys	Ala	Ala	Leu	Met	Arg	Pro	Leu	Val	Val	Thr	Ala	Gln	Pro	Gly	
			195					200					205			
tcg	ggg	ccg	ccg	cga	ccc	tcc	cgg	cgc	ctg	cta	gac	ctg	agc	gtc	ttc	731
Ser	Gly	Pro	Pro	Arg	Pro	Ser	Arg	Arg	Leu	Leu	Asp	Leu	Ser	Val	Phe	
			210					215					220			
cgg	gac	cgc	ggc	ttt	gtg	ctt	tac	gcc	gtg	gcc	gcc	tcg	gtc	atg	gtg	779
Arg	Asp	Arg	Gly	Phe	Val	Leu	Tyr	Ala	Val	Ala	Ala	Ser	Val	Met	Val	
			225				230				235					
ctg	ggg	ctc	ttc	gtc	ccg	ccc	gtg	ttc	gtg	gtg	agc	tac	gcc	aag	gac	827
Leu	Gly	Leu	Phe	Val	Pro	Pro	Val	Phe	Val	Val	Ser	Tyr	Ala	Lys	Asp	
				240		245				250					255	
ctg	ggc	gtg	ccc	gac	acc	aag	gcc	gcc	ttc	ctg	ctc	acc	atc	ctg	ggc	875
Leu	Gly	Val	Pro	Asp	Thr	Lys	Ala	Ala	Phe	Leu	Leu	Thr	Ile	Leu	Gly	
				260				265						270		
ttc	att	gac	atc	ttc	gcg	cgg	ccg	gcc	gcg	ggc	ttc	gtg	gcg	ggg	ctt	923
Phe	Ile	Asp	Ile	Phe	Ala	Arg	Pro	Ala	Ala	Gly	Phe	Val	Ala	Gly	Leu	
			275					280					285			
ggg	aag	gtg	cgg	ccc	tac	tcc	gtc	tac	ctc	ttc	agc	ttc	tcc	atg	ttc	971
Gly	Lys	Val	Arg	Pro	Tyr	Ser	Val	Tyr	Leu	Phe	Ser	Phe	Ser	Met	Phe	
			290					295				300				
ttc	aac	ggc	ctc	gcg	gac	ctg	gcg	ggc	tct	acg	gcg	ggc	gac	tac	ggc	1019
Phe	Asn	Gly	Leu	Ala	Asp	Leu	Ala	Gly	Ser	Thr	Ala	Gly	Asp	Tyr	Gly	
			305				310				315					
ggc	ctc	gtg	gtc	ttc	tgc	atc	ttc	ttt	ggc	atc	tcc	tac	ggc	atg	gtg	1067
Gly	Leu	Val	Val	Phe	Cys	Ile	Phe	Phe	Gly	Ile	Ser	Tyr	Gly	Met	Val	
				320		325				330					335	
ggg	gcc	ctg	cag	ttc	gag	gtg	ctc	atg	gcc	atc	gtg	ggc	acc	cac	aag	1115
Gly	Ala	Leu	Gln	Phe	Glu	Val	Leu	Met	Ala	Ile	Val	Gly	Thr	His	Lys	
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5189-2.ST25.txt

ttc tcc agt gcc att ggc ctg gtg ctg ctg atg gag gcg gtg gcc gtg Phe Ser Ser Ala Ile Gly Leu Val Leu Leu Met Glu Ala Val Ala Val	1163
ctc gtc ggg ccc cct tcg gga ggc aaa ctc ctg gat gcg acc cac gtc Leu Val Gly Pro Pro Ser Gly Gly Lys Leu Leu Asp Ala Thr His Val	1211
tac atg tac gtg ttc atc ctg gcg ggg gcc gag gtg ctc acc tcc tcc Tyr Met Tyr Val Phe Ile Leu Ala Gly Ala Glu Val Leu Thr Ser Ser	1259
ctg att ttg ctg ctg ggc aac ttc ttc tgc att agg aag aag ccc aaa Leu Ile Leu Leu Leu Gly Asn Phe Phe Cys Ile Arg Lys Lys Pro Lys	1307
gag cca cag cct gag gtg gcg gcc gcg gag gag gag aag ctc cac aag Glu Pro Gln Pro Glu Val Ala Ala Ala Glu Glu Glu Lys Leu His Lys	1355
cct cct gca gac tcg ggg gtg gac ttg cgg gag gtg gag cat ttc ctg Pro Pro Ala Asp Ser Gly Val Asp Leu Arg Glu Val Glu His Phe Leu	1403
aag gct gag cct gag aaa aac ggg gag gtg gtt cac acc ccg gaa aca Lys Ala Glu Pro Glu Lys Asn Gly Glu Val Val His Thr Pro Glu Thr	1451
agt gtc tga gtggctgggc ggggccggca ggcacaggga ggaggtacag Ser Val	1500
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gggctccagc tgccggccca gcggatcgtc gcccgatcag tgttttgagg gggaagggtg	1620
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tt	1982

<210> 66
 <211> 465
 <212> PRT
 <213> Homo sapiens

<400> 66

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Asp Gly Gly Trp Gly Trp Ala Val Leu Phe Gly Cys Phe Val Ile Thr
20 25 30

5189-2.ST25.txt

Gly Phe Ser Tyr Ala Phe Pro Lys Ala Val Ser Val Phe Phe Lys Glu
35 40 45

Leu Ile Gln Glu Phe Gly Ile Gly Tyr Ser Asp Thr Ala Trp Ile Ser
50 55 60

ser Ile Leu Leu Ala Met Leu Tyr Gly Thr Gly Pro Leu Cys Ser Val
65 70 75 80

Cys Val Asn Arg Phe Gly Cys Arg Pro Val Met Leu Val Gly Gly Leu
85 90 95

Phe Ala Ser Leu Gly Met Val Ala Ala Ser Phe Cys Arg Ser Ile Ile
100 105 110

Gln Val Tyr Leu Thr Thr Gly Val Ile Thr Gly Leu Gly Leu Ala Leu
115 120 125

Asn Phe Gln Pro Ser Leu Ile Met Leu Asn Arg Tyr Phe Ser Lys Arg
130 135 140

Arg Pro Met Ala Asn Gly Leu Ala Ala Ala Gly Ser Pro Val Phe Leu
145 150 155 160

Cys Ala Leu Ser Pro Leu Gly Gln Leu Leu Gln Asp Arg Tyr Gly Trp
165 170 175

Arg Gly Gly Phe Leu Ile Leu Gly Gly Leu Leu Leu Asn Cys Cys Val
180 185 190

Cys Ala Ala Leu Met Arg Pro Leu Val Val Thr Ala Gln Pro Gly Ser
195 200 205

Gly Pro Pro Arg Pro Ser Arg Arg Leu Leu Asp Leu Ser Val Phe Arg
210 215 220

Asp Arg Gly Phe Val Leu Tyr Ala Val Ala Ala Ser Val Met Val Leu
225 230 235 240

Gly Leu Phe Val Pro Pro Val Phe Val Val Ser Tyr Ala Lys Asp Leu
245 250 255

Gly Val Pro Asp Thr Lys Ala Ala Phe Leu Leu Thr Ile Leu Gly Phe
260 265 270

Ile Asp Ile Phe Ala Arg Pro Ala Ala Gly Phe Val Ala Gly Leu Gly
275 280 285

5189-2.ST25.txt

Lys Val Arg Pro Tyr Ser Val Tyr Leu Phe Ser Phe Ser Met Phe Phe
290 295 300

Asn Gly Leu Ala Asp Leu Ala Gly Ser Thr Ala Gly Asp Tyr Gly Gly
305 310 315 320

Leu Val Val Phe Cys Ile Phe Phe Gly Ile Ser Tyr Gly Met Val Gly
325 330 335

Ala Leu Gln Phe Glu Val Leu Met Ala Ile Val Gly Thr His Lys Phe
340 345 350

Ser Ser Ala Ile Gly Leu Val Leu Leu Met Glu Ala Val Ala Val Leu
355 360 365

Val Gly Pro Pro Ser Gly Gly Lys Leu Leu Asp Ala Thr His Val Tyr
370 375 380

Met Tyr Val Phe Ile Leu Ala Gly Ala Glu Val Leu Thr Ser Ser Leu
385 390 395 400

Ile Leu Leu Leu Gly Asn Phe Phe Cys Ile Arg Lys Lys Pro Lys Glu
405 410 415

Pro Gln Pro Glu Val Ala Ala Ala Glu Glu Glu Lys Leu His Lys Pro
420 425 430

Pro Ala Asp Ser Gly Val Asp Leu Arg Glu Val Glu His Phe Leu Lys
435 440 445

Ala Glu Pro Glu Lys Asn Gly Glu Val Val His Thr Pro Glu Thr Ser
450 455 460

Val
465

<210> 67
<211> 2856
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (591)..(2216)
<223>

<400> 67
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cctcccggac ctaagagcct ggggtcccctg tttccggagg tccgcttccc ggcccccaga 120
ttctggcatc ccagccctca gtgtccaaga cccaggcagc ccgggtcccc gcctcccgga 180

5189-2.ST25.txt

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ccagctccta gggccaagga acccgggcgc tccgaactcc cagcttttcgg acatctggca	360
cacggggcag agcagagaag ctcagcgccc agcctgggga atttaaacac tccagcttcc	420
aagagccaag gaacttcagt gctgtgaact cacaactcta aggagccctc caaagttcca	480
gtctccaggt gctgttactc aactcagtcc taggaacgtc gggtcctggg aaggagccca	540
agcgctccca gccagcttcc aggcgctaag aaaccccggt gcttcccatc atg gtg	596
	Met Val 1
gcc gat cct cct cga gac tcc aag ggg ctc gca gcg gcg gag ccc acc	644
Ala Asp Pro Pro Arg Asp Ser Lys Gly Leu Ala Ala Ala Glu Pro Thr	
	5 10 15
gcc aac ggg ggc ctg gcg ctg gcc tcc atc gag gac caa ggc gcg gca	692
Ala Asn Gly Gly Leu Ala Leu Ala Ser Ile Glu Asp Gln Gly Ala Ala	
	20 25 30
gca ggc ggc tac tgc ggt tcc cgg gac cag gtg cgc cgc tgc ctt cga	740
Ala Gly Gly Tyr Cys Gly Ser Arg Asp Gln Val Arg Arg Cys Leu Arg	
	35 40 45 50
gcc aac ctg ctt gtg ctg ctg aca gtg gtg gcc gtg gtg gcc ggc gtg	788
Ala Asn Leu Leu Val Leu Leu Thr Val Val Ala Val Val Ala Gly Val	
	55 60 65
gcg ctg gga ctg ggg gtg tcg ggg gcc ggg ggt gcg ctg gcg ttg ggc	836
Ala Leu Gly Leu Gly Val Ser Gly Ala Gly Gly Ala Leu Ala Leu Gly	
	70 75 80
ccg gag cgc ttg agc gcc ttc gtc ttc ccg ggc gag ctg ctg ctg cgt	884
Pro Glu Arg Leu Ser Ala Phe Val Phe Pro Gly Glu Leu Leu Leu Arg	
	85 90 95
ctg ctg cgg atg atc atc ttg ccg ctg gtg gtg tgc agc ttg atc ggc	932
Leu Leu Arg Met Ile Ile Leu Pro Leu Val Val Cys Ser Leu Ile Gly	
	100 105 110
ggc gcc gcc agc ctg gac ccc ggc gcg ctc ggc cgt ctg ggc gcc tgg	980
Gly Ala Ala Ser Leu Asp Pro Gly Ala Leu Gly Arg Leu Gly Ala Trp	
	115 120 125 130
gcg ctg ctc ttt ttc ctg gtc acc acg ctg ctg gcg tcg gcg ctc gga	1028
Ala Leu Leu Phe Phe Leu Val Thr Thr Leu Leu Ala Ser Ala Leu Gly	
	135 140 145
gtg ggc ttg gcg ctg gct ctg cag ccg ggc gcc gcc tcc gcc gcc atc	1076
Val Gly Leu Ala Leu Ala Leu Gln Pro Gly Ala Ala Ser Ala Ala Ile	
	150 155 160
aac gcc tcc gtg gga gcc gcg ggc agt gcc gaa aat gcc ccc agc aag	1124
Asn Ala Ser Val Gly Ala Ala Gly Ser Ala Glu Asn Ala Pro Ser Lys	
	165 170 175
gag gtg ctc gat tcg ttc ctg gat ctt gcg aga aat atc ttc cct tcc	1172
Glu Val Leu Asp Ser Phe Leu Asp Leu Ala Arg Asn Ile Phe Pro Ser	
	180 185 190

5189-2.ST25.txt

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agg Arg	aat Asn	atc Ile	acc Thr	gga Gly 215	acc Thr	agg Arg	gtg Val	aag Lys	gtg Val 220	ccc Pro	gtg Val	ggg Gly	cag Gln	gag Glu 225	gtg Val	1268
gag Glu	ggg Gly	atg Met	aac Asn 230	atc Ile	ctg Leu	ggc Gly	ttg Leu	gta Val 235	gtg Val	ttt Phe	gcc Ala	atc Ile	gtc Val 240	ttt Phe	ggt Gly	1316
gtg Val	gcg Ala	ctg Leu 245	cgg Arg	aag Lys	ctg Leu	ggg Gly	cct Pro 250	gaa Glu	ggg Gly	gag Glu	ctg Leu	ctt Leu 255	atc Ile	cgc Arg	ttc Phe	1364
ttc Phe	aac Asn 260	tcc Ser	ttc Phe	aat Asn	gag Glu	gcc Ala 265	acc Thr	atg Met	gtt Val	ctg Leu	gtc Val 270	tcc Ser	tgg Trp	atc Ile	atg Met	1412
tgg Trp 275	tac Tyr	gcc Ala	cct Pro	gtg Val	ggc Gly 280	atc Ile	atg Met	ttc Phe	ctg Leu	gtg Val 285	gct Ala	ggc Gly	aag Lys	atc Ile	gtg Val 290	1460
gag Glu	atg Met	gag Glu	gat Asp	gtg Val 295	ggt Gly	tta Leu	ctc Leu	ttt Phe	gcc Ala 300	cgc Arg	ctt Leu	ggc Gly	aag Lys	tac Tyr 305	att Ile	1508
ctg Leu	tgc Cys	tgc Cys	ctg Leu 310	ctg Leu	ggt Gly	cac His	gcc Ala	atc Ile 315	cat His	ggg Gly	ctc Leu	ctg Leu	gta Val 320	ctg Leu	ccc Pro	1556
ctc Leu	atc Ile	tac Tyr 325	ttc Phe	ctc Leu	ttc Phe	acc Thr	cgc Arg 330	aaa Lys	aac Asn	ccc Pro	tac Tyr	cgc Arg 335	ttc Phe	ctg Leu	tgg Trp	1604
ggc Gly	atc Ile 340	gtg Val	acg Thr	ccg Pro	ctg Leu	gcc Ala 345	act Thr	gcc Ala	ttt Phe	ggg Gly	acc Thr 350	tct Ser	tcc Ser	agt Ser	tcc Ser	1652
gcc Ala 355	acg Thr	ctg Leu	ccg Pro	ctg Leu	atg Met 360	atg Met	aag Lys	tgc Cys	gtg Val	gag Glu 365	gag Glu	aat Asn	aat Asn	ggc Gly	gtg Val 370	1700
gcc Ala	aag Lys	cac His	atc Ile	agc Ser 375	cgt Arg	ttc Phe	atc Ile	ctg Leu	ccc Pro 380	atc Ile	ggc Gly	gcc Ala	acc Thr	gtc Val 385	aac Asn	1748
atg Met	gac Asp	ggt Gly	gcc Ala 390	gcg Ala	ctc Leu	ttc Phe	cag Gln	tgc Cys 395	gtg Val	gcc Ala	gca Ala	gtg Val 400	ttc Phe	att Ile	gca Ala	1796
cag Gln	ctc Leu	agc Ser 405	cag Gln	cag Gln	tcc Ser	ttg Leu	gac Asp 410	ttc Phe	gta Val	aag Lys	atc Ile	atc Ile	acc Thr	atc Ile	ctg Leu	1844
gtc Val	acg Thr 420	gcc Ala	aca Thr	gcg Ala	tcc Ser	agc Ser 425	gtg Val	ggg Gly	gca Ala	gcg Ala	ggc Gly 430	atc Ile	cct Pro	gct Ala	gga Gly	1892
ggt Gly 435	gtc Val	ctc Leu	act Thr	ctg Leu	gcc Ala 440	atc Ile	atc Ile	ctc Leu	gaa Glu	gca Ala 445	gtc Val	aac Asn	ctc Leu	ccg Pro	gtc Val 450	1940

5189-2.ST25.txt

gac cat atc tcc ttg atc ctg gct gtg gac tgg cta gtc gac cgg tcc 1988
 Asp His Ile Ser Leu Ile Leu Ala Val Asp Trp Leu Val Asp Arg Ser
 455 460 465
 tgt acc gtc ctc aat gta gaa ggt gac gct ctg ggg gca gga ctc ctc 2036
 Cys Thr Val Leu Asn Val Glu Gly Asp Ala Leu Gly Ala Gly Leu Leu
 470 475 480
 caa aat tat gtg gac cgt acg gag tct aga agc aca gag cct gag ttg 2084
 Gln Asn Tyr Val Asp Arg Thr Glu Ser Arg Ser Thr Glu Pro Glu Leu
 485 490 495
 ata caa gtg aag agt gag ctg ccc ctg gat ccg ctg cca gtc ccc act 2132
 Ile Gln Val Lys Ser Glu Leu Pro Leu Asp Pro Leu Pro Val Pro Thr
 500 505 510
 gag gaa gga aac ccc ctc ctc aaa cac tat cgg ggg ccc gca ggg gat 2180
 Glu Glu Gly Asn Pro Leu Leu Lys His Tyr Arg Gly Pro Ala Gly Asp
 515 520 525 530
 gcc acg gtc gcc tct gag aag gaa tca gtc atg taa accccgggag 2226
 Ala Thr Val Ala Ser Glu Lys Glu Ser Val Met
 535 540
 ggaccttccc tgccctgctg ggggtgctct ttggacactg gattatgagg aatggataaa 2286
 tggatgagct agggctctgg gggctgcct gcacactctg gggagccagg ggccccagca 2346
 ccctccagga caggagatct gggatgcctg gctgctggag tacatgtgtt cacaagggtt 2406
 actcctcaaa acccccagtt ctactcatg tccccaactc aaggctagaa aacagcaaga 2466
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 gagcagggtca caggtcacca tggggaattc tagccccac tgggggggatg ttacaacacc 2586
 atgctgggta ttttggcggc tgtagttgtg gggggatgtg tgtgtgcacg tgtgtgtgtg 2646
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 tgtccccaga tcccctattc cctccacaat aacagaaaca ctcccaggga ctctggggag 2766
 aggctgagga caaataacctg ctgtcactcc agaggacatt ttttttagca ataaaattga 2826
 gtgtcaacta tttaaaaaaa aaaaaaaaaa 2856

<210> 68
 <211> 541
 <212> PRT
 <213> Homo sapiens

<400> 68

Met Val Ala Asp Pro Pro Arg Asp Ser Lys Gly Leu Ala Ala Ala Glu
1 5 10 15

Pro Thr Ala Asn Gly Gly Leu Ala Leu Ala Ser Ile Glu Asp Gln Gly
20 25 30

Ala Ala Ala Gly Gly Tyr Cys Gly Ser Arg Asp Gln Val Arg Arg Cys
35 40 45

5189-2.ST25.txt

Leu Arg Ala Asn Leu Leu Val Leu Leu Thr Val Val Ala Val Val Ala
 50 55 60
 Gly Val Ala Leu Gly Leu Gly Val Ser Gly Ala Gly Gly Ala Leu Ala
 65 70 75 80
 Leu Gly Pro Glu Arg Leu Ser Ala Phe Val Phe Pro Gly Glu Leu Leu
 85 90 95
 Leu Arg Leu Leu Arg Met Ile Ile Leu Pro Leu Val Val Cys Ser Leu
 100 105 110
 Ile Gly Gly Ala Ala Ser Leu Asp Pro Gly Ala Leu Gly Arg Leu Gly
 115 120 125
 Ala Trp Ala Leu Leu Phe Phe Leu Val Thr Thr Leu Leu Ala Ser Ala
 130 135 140
 Leu Gly Val Gly Leu Ala Leu Ala Leu Gln Pro Gly Ala Ala Ser Ala
 145 150 155 160
 Ala Ile Asn Ala Ser Val Gly Ala Ala Gly Ser Ala Glu Asn Ala Pro
 165 170 175
 Ser Lys Glu Val Leu Asp Ser Phe Leu Asp Leu Ala Arg Asn Ile Phe
 180 185 190
 Pro Ser Asn Leu Val Ser Ala Ala Phe Arg Ser Tyr Ser Thr Thr Tyr
 195 200 205
 Glu Glu Arg Asn Ile Thr Gly Thr Arg Val Lys Val Pro Val Gly Gln
 210 215 220
 Glu Val Glu Gly Met Asn Ile Leu Gly Leu Val Val Phe Ala Ile Val
 225 230 235 240
 Phe Gly Val Ala Leu Arg Lys Leu Gly Pro Glu Gly Glu Leu Leu Ile
 245 250 255
 Arg Phe Phe Asn Ser Phe Asn Glu Ala Thr Met Val Leu Val Ser Trp
 260 265 270
 Ile Met Trp Tyr Ala Pro Val Gly Ile Met Phe Leu Val Ala Gly Lys
 275 280 285
 Ile Val Glu Met Glu Asp Val Gly Leu Leu Phe Ala Arg Leu Gly Lys
 290 295 300

5189-2.ST25.txt

Tyr Ile Leu Cys Cys Leu Leu Gly His Ala Ile His Gly Leu Leu Val
305 310 315 320

Leu Pro Leu Ile Tyr Phe Leu Phe Thr Arg Lys Asn Pro Tyr Arg Phe
325 330 335

Leu Trp Gly Ile Val Thr Pro Leu Ala Thr Ala Phe Gly Thr Ser Ser
340 345 350

Ser Ser Ala Thr Leu Pro Leu Met Met Lys Cys Val Glu Glu Asn Asn
355 360 365

Gly Val Ala Lys His Ile Ser Arg Phe Ile Leu Pro Ile Gly Ala Thr
370 375 380

Val Asn Met Asp Gly Ala Ala Leu Phe Gln Cys Val Ala Ala Val Phe
385 390 395 400

Ile Ala Gln Leu Ser Gln Gln Ser Leu Asp Phe Val Lys Ile Ile Thr
405 410 415

Ile Leu Val Thr Ala Thr Ala Ser Ser Val Gly Ala Ala Gly Ile Pro
420 425 430

Ala Gly Gly Val Leu Thr Leu Ala Ile Ile Leu Glu Ala Val Asn Leu
435 440 445

Pro Val Asp His Ile Ser Leu Ile Leu Ala Val Asp Trp Leu Val Asp
450 455 460

Arg Ser Cys Thr Val Leu Asn Val Glu Gly Asp Ala Leu Gly Ala Gly
465 470 475 480

Leu Leu Gln Asn Tyr Val Asp Arg Thr Glu Ser Arg Ser Thr Glu Pro
485 490 495

Glu Leu Ile Gln Val Lys Ser Glu Leu Pro Leu Asp Pro Leu Pro Val
500 505 510

Pro Thr Glu Glu Gly Asn Pro Leu Leu Lys His Tyr Arg Gly Pro Ala
515 520 525

Gly Asp Ala Thr Val Ala Ser Glu Lys Glu Ser Val Met
530 535 540

<210> 69
<211> 2445
<212> DNA
<213> Homo sapiens

5189-2.ST25.txt

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<220>
<221> CDS
<222> (467)..(1441)
<223>

<400> 69
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ggagacaggg tctcgctctg ttgcccaggc tggagtgcgg tgggtgcgatc acggttccat      120
gcagcccccg acctcccggg ctcagggtgat tctcccgctt cagcaccgcg agcagctagg      180
accacaggcg cgagccactg cgtccggccg gcgggactta tttgtcaggc ggggattggg      240
ttccgccagc ctaaaggagg gggtaagcgc cagaatatga atcgccggga agctggggaga      300
aagctccggg aaaccttgag cagccaggct gcctgctccg cccgctcccg ctcccgatct      360
ctgattgtct ctaactgacg tcaactcccg tctgtcccg cccactcggg gctgccattg      420
gcagtcggtc gtgggtctga gagtcactgg agctaccaga agcatc atg ggg ccc      475
                                   Met Gly Pro
                                   1

tgg gga gag cca gag ctc ctg gtg tgg cgc ccc gag gcg gta gct tca      523
Trp Gly Glu Pro Glu Leu Leu Val Trp Arg Pro Glu Ala Val Ala Ser
      5                                10                                15

gag cct cca gtg cct gtg ggg ctg gag gtg aag ttg ggg gcc ctg gtg      571
Glu Pro Pro Val Pro Val Gly Leu Glu Val Lys Leu Gly Ala Leu Val
      20                                25                                30                                35

ctg ctg ctg gtg ctc acc ctc ctc tgc agc ctg gtg ccc atc tgt gtg      619
Leu Leu Leu Val Leu Thr Leu Leu Cys Ser Leu Val Pro Ile Cys Val
      40                                45                                50

ctg cgc cgg cca gga gct aac cat gaa ggc tca gct tcc cgc cag aaa      667
Leu Arg Arg Pro Gly Ala Asn His Glu Gly Ser Ala Ser Arg Gln Lys
      55                                60                                65

gcc ctg agc cta gta agc tgt ttc gcg ggg ggc gtc ttt ttg gcc act      715
Ala Leu Ser Leu Val Ser Cys Phe Ala Gly Gly Val Phe Leu Ala Thr
      70                                75                                80

tgt ctc ctg gac ctg ctg cct gac tac ctg gct gcc ata gat gag gcc      763
Cys Leu Leu Asp Leu Leu Pro Asp Tyr Leu Ala Ala Ile Asp Glu Ala
      85                                90                                95

ctg gca gcc ttg cac gtg acg ctc cag ttc cca ctg caa gag ttc atc      811
Leu Ala Ala Leu His Val Thr Leu Gln Phe Pro Leu Gln Glu Phe Ile
      100                                105                                110                                115

ctg gcc atg ggc ttc ttc ctg gtc ctg gtg atg gag cag atc aca ctg      859
Leu Ala Met Gly Phe Phe Leu Val Leu Val Met Glu Gln Ile Thr Leu
      120                                125                                130

gct tac aag gag cag tca ggg ccg tca cct ctg gag gaa aca agg gct      907
Ala Tyr Lys Glu Gln Ser Gly Pro Ser Pro Leu Glu Glu Thr Arg Ala
      135                                140                                145

ctg ctg gga aca gtg aat ggt ggg ccg cag cat tgg cat gat ggg cca      955
Leu Leu Gly Thr Val Asn Gly Gly Pro Gln His Trp His Asp Gly Pro
      150                                155                                160

```

5189-2.ST25.txt

ggg gtc cca cag gcg agt gga gcc cca gca acc ccc tca gcc ttg cgt Gly Val Pro Gln Ala Ser Gly Ala Pro Ala Thr Pro Ser Ala Leu Arg 165 170 175	1003
gcc tgt gta ctg gtg ttc tcc ctg gcc ctc cac tcc gtg ttc gag ggg Ala Cys Val Leu Val Phe Ser Leu Ala Leu His Ser Val Phe Glu Gly 180 185 190 195	1051
ctg gcg gta ggg ctg cag cga gac cgg gct cgg gcc atg gag ctg tgc Leu Ala Val Gly Leu Gln Arg Asp Arg Ala Arg Ala Met Glu Leu Cys 200 205 210	1099
ctg gct ttg ctg ctc cac aag ggc atc ctg gct gtc agc ctg tcc ctg Leu Ala Leu Leu Leu His Lys Gly Ile Leu Ala Val Ser Leu Ser Leu 215 220 225	1147
cgg ctg ttg cag agc cac ctt agg gca cag gtg gtg gct ggc tgt ggg Arg Leu Leu Gln Ser His Leu Arg Ala Gln Val Val Ala Gly Cys Gly 230 235 240	1195
atc ctc ttc tca tgc atg aca cct cta ggc atc ggg ctg ggt gca gct Ile Leu Phe Ser Cys Met Thr Pro Leu Gly Ile Gly Leu Gly Ala Ala 245 250 255	1243
ctg gca gag tcg gca gga cct ctg cac cag ctg gcc cag tct gtg cta Leu Ala Glu Ser Ala Gly Pro Leu His Gln Leu Ala Gln Ser Val Leu 260 265 270 275	1291
gag ggc atg gca gct ggc acc ttt ctc tat atc acc ttt ctg gaa atc Glu Gly Met Ala Ala Gly Thr Phe Leu Tyr Ile Thr Phe Leu Glu Ile 280 285 290	1339
ctg ccc cag gag ctg gcc agt tct gag caa agg atc ctc aag gtc att Leu Pro Gln Glu Leu Ala Ser Ser Glu Gln Arg Ile Leu Lys Val Ile 295 300 305	1387
ctg ctc cta gca ggc ttt gcc ctg ctc act ggc ctg ctc ttc atc caa Leu Leu Leu Ala Gly Phe Ala Leu Leu Thr Gly Leu Leu Phe Ile Gln 310 315 320	1435
atc tag ggggcttcaa gagaggggca ggggagattg atgatcaggt gcccctgttc Ile	1491
tcccttccct cccccagttg tggggaatag gaaggaaagg ggaagggaaa tactgaggac	1551
caaaaagtgc tctgggagct aaagatagag cctttggggc tatctgacta atgagaggga	1611
agtgggcaga caagaggctg gccccagtcc caaggaacaa gagatgggtca agtcgctaga	1671
gacatatcag gggacattag gattggggaa gacacttgac tgctagaatc agaggttgga	1731
cactatacat aaggacaggc tcacatggga ggctggaggt gggtagccag ctgctgtgga	1791
acgggtatgg acaggtcata aacctagagt cagtgtcctg ttggtcctag cccatttcag	1851
caccctgcc cttggagtgg acccctccta ctcttcttag cgcctaccct catacctatc	1911
tccctcctcc catctcctag gggactggcg ccaaatggtc tctccctgcc aatttttgga	1971
tcttctctgg cctctccagt cctgcttact cctctatctt taaagtgcc aacaaatccc	2031
cttcctcttt ctcaaagcac agtaatgtgg cactgagccc taccagcac ctgaggaag	2091

5189-2.ST25.txt

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ggggcctgct tgctctttat tttgggtccc gatcctgggg tggggcagaa atattttctg 2151
ggctggggta ggaggaaggt tgttgcagcc atctactgct gctgtaccct aggaatatgg 2211
ggacatggac atggtgtccc atgccagat gataaacact gagctgcca aacatttttt 2271
taaatacacc cgaggagccc aagggggaag ggcaatgcct acccccagcg ttatttttgg 2331
ggagggaggg ctgtgcatag ggacatattc tttagaatct attttattaa ctgacctgtt 2391
ttgggacctg ttacccaaat aaaagatggt tctagaaaaa aaaaaaaaaa aaaa 2445

```

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<210> 70
<211> 324
<212> PRT
<213> Homo sapiens
<400> 70

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```

Met Gly Pro Trp Gly Glu Pro Glu Leu Leu Val Trp Arg Pro Glu Ala
1          5          10          15

```

```

Val Ala Ser Glu Pro Pro Val Pro Val Gly Leu Glu Val Lys Leu Gly
20          25          30

```

```

Ala Leu Val Leu Leu Leu Val Leu Thr Leu Leu Cys Ser Leu Val Pro
35          40          45

```

```

Ile Cys Val Leu Arg Arg Pro Gly Ala Asn His Glu Gly Ser Ala Ser
50          55          60

```

```

Arg Gln Lys Ala Leu Ser Leu Val Ser Cys Phe Ala Gly Gly Val Phe
65          70          75          80

```

```

Leu Ala Thr Cys Leu Leu Asp Leu Leu Pro Asp Tyr Leu Ala Ala Ile
85          90          95

```

```

Asp Glu Ala Leu Ala Ala Leu His Val Thr Leu Gln Phe Pro Leu Gln
100         105         110

```

```

Glu Phe Ile Leu Ala Met Gly Phe Phe Leu Val Leu Val Met Glu Gln
115         120         125

```

```

Ile Thr Leu Ala Tyr Lys Glu Gln Ser Gly Pro Ser Pro Leu Glu Glu
130         135         140

```

```

Thr Arg Ala Leu Leu Gly Thr Val Asn Gly Gly Pro Gln His Trp His
145         150         155         160

```

```

Asp Gly Pro Gly Val Pro Gln Ala Ser Gly Ala Pro Ala Thr Pro Ser
165         170         175

```

5189-2.ST25.txt

Ala Leu Arg Ala Cys Val Leu Val Phe Ser Leu Ala Leu His Ser Val
180 185 190

Phe Glu Gly Leu Ala Val Gly Leu Gln Arg Asp Arg Ala Arg Ala Met
195 200 205

Glu Leu Cys Leu Ala Leu Leu Leu His Lys Gly Ile Leu Ala Val Ser
210 215 220

Leu Ser Leu Arg Leu Leu Gln Ser His Leu Arg Ala Gln Val Val Ala
225 230 235 240

Gly Cys Gly Ile Leu Phe Ser Cys Met Thr Pro Leu Gly Ile Gly Leu
245 250 255

Gly Ala Ala Leu Ala Glu Ser Ala Gly Pro Leu His Gln Leu Ala Gln
260 265 270

Ser Val Leu Glu Gly Met Ala Ala Gly Thr Phe Leu Tyr Ile Thr Phe
275 280 285

Leu Glu Ile Leu Pro Gln Glu Leu Ala Ser Ser Glu Gln Arg Ile Leu
290 295 300

Lys Val Ile Leu Leu Leu Ala Gly Phe Ala Leu Leu Thr Gly Leu Leu
305 310 315 320

Phe Ile Gln Ile

<210> 71
<211> 1544
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (301)..(1059)
<223>

<220>
<221> misc_feature
<222> (1358)..(1358)
<223> n = a, t, c, or g

<400> 71
gcacgagttg ggaggtgtag cgcggtcttg aacgcgctga gggccgttga gtgtcgcagg 60
cggcgagggc gcgagtgagg agcagacca ggcacgcgc gccgagaagg ccgggctcc 120
ccacactgaa ggtccgaaa ggcgacttcc gggggctttg gcacctggcg gaccctccc 180
gagcgctcgc acctgaacgc gaggcgctcc attgcgcgtg cgcgttgagg ggcttcccgc 240

5189-2.ST25.txt

acctgatcgc gagaccccaa cggctggtgg cgtcgcctgc gcgtctcggc tgagctggcc	300
atg gcg cag ctg tgc ggg ctg agg cgg agc cgg gcg ttt ctc gcc ctg Met Ala Gln Leu Cys Gly Leu Arg Arg Ser Arg Ala Phe Leu Ala Leu 1 5 10 15	348
ctg gga tcg ctg ctc ctc tct ggg gtc ctg gcg gcc gac cga gaa cgc Leu Gly Ser Leu Leu Leu Ser Gly Val Leu Ala Ala Asp Arg Glu Arg 20 25 30	396
agc atc cac gac ttc tgc ctg gtg tcg aag gtg gtg ggc aga tgc cgg Ser Ile His Asp Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg 35 40 45	444
gcc tcc atg cct agg tgg tgg tac aat gtc act gac gga tcc tgc cag Ala Ser Met Pro Arg Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln 50 55 60	492
ctg ttt gtg tat ggg ggc tgt gac gga aac agc aat aat tac ctg acc Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr 65 70 75 80	540
aag gag gag tgc ctc aag aaa tgt gcc act gtc aca gag aat gcc acg Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val Thr Glu Asn Ala Thr 85 90 95	588
ggt gac ctg gcc acc agc agg aat gca gcg gat tcc tct gtc cca agt Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp Ser Ser Val Pro Ser 100 105 110	636
gct ccc aga agg cag gat tct gaa gac cac tcc agc gat atg ttc aac Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn 115 120 125	684
tat gaa gaa tac tgc acc gcc aac gca gtc act ggg cct tgc cgt gca Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala 130 135 140	732
tcc ttc cca cgc tgg tac ttt gac gtg gag agg aac tcc tgc aat aac Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn 145 150 155 160	780
ttc atc tat gga ggc tgc cgg ggc aat aag aac agc tac cgc tct gag Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu 165 170 175	828
gag gcc tgc atg ctc cgc tgc ttc cgc cag cag gag aat cct ccc ctg Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln Glu Asn Pro Pro Leu 180 185 190	876
ccc ctt ggc tca aag gtg gtg gtt ctg gcg ggg ctg ttc gtg atg gtg Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly Leu Phe Val Met Val 195 200 205	924
ttg atc ctc ttc ctg gga gcc tcc atg gtc tac ctg atc cgg gtg gca Leu Ile Leu Phe Leu Gly Ala Ser Met Val Tyr Leu Ile Arg Val Ala 210 215 220	972
cgg agg aac cag gag cgt gcc ctg cgc acc gtc tgg agc tcc gga gat Arg Arg Asn Gln Glu Arg Ala Leu Arg Thr Val Trp Ser Ser Gly Asp 225 230 235 240	1020
gac aag gag cag ctg gtg aag aac aca tat gtc ctg tga ccgccctgtc Asp Lys Glu Gln Leu Val Lys Asn Thr Tyr Val Leu	1069

5189-2.ST25.txt

245

250

gccaaagagga ctggggaagg gaggggagac tatgtgtgag ctttttttaa atagagggat 1129
tgactcggat ttgagtgatc attagggctg aggtctgttt ctctgggagg taggacggct 1189
gcttcctggt ctggcagggg tgggtttgct ttggaaatcc tctaggaggc tcctcctcgc 1249
atggcctgca gtctggcagc agccccgagt tgtttcctcg ctgatcgatt tctttcctcc 1309
aggtagagtt ttctttgctt atgttgaatt ccattgcctc cttttctcna tcacagaagt 1369
gatgttgga tgcgtttcttt tgtttgctg atttatggtt tttttaagta taaacaaaag 1429
ttttttatta gcattctgaa agaaggaaag taaaatgtac aagttaata aaaaggggcc 1489
ttccccttta gaataaattt ccagcatggt gctttcaaaa aaaaaaaaaa aaaaa 1544

<210> 72
<211> 252
<212> PRT
<213> Homo sapiens
<400> 72

Met Ala Gln Leu Cys Gly Leu Arg Arg Ser Arg Ala Phe Leu Ala Leu
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Leu Gly Ser Leu Leu Leu Ser Gly Val Leu Ala Ala Asp Arg Glu Arg
20 25 30
Ser Ile His Asp Phe Cys Leu Val Ser Lys Val Val Gly Arg Cys Arg
35 40 45
Ala Ser Met Pro Arg Trp Trp Tyr Asn Val Thr Asp Gly Ser Cys Gln
50 55 60
Leu Phe Val Tyr Gly Gly Cys Asp Gly Asn Ser Asn Asn Tyr Leu Thr
65 70 75 80
Lys Glu Glu Cys Leu Lys Lys Cys Ala Thr Val Thr Glu Asn Ala Thr
85 90 95
Gly Asp Leu Ala Thr Ser Arg Asn Ala Ala Asp Ser Ser Val Pro Ser
100 105 110
Ala Pro Arg Arg Gln Asp Ser Glu Asp His Ser Ser Asp Met Phe Asn
115 120 125
Tyr Glu Glu Tyr Cys Thr Ala Asn Ala Val Thr Gly Pro Cys Arg Ala
130 135 140
Ser Phe Pro Arg Trp Tyr Phe Asp Val Glu Arg Asn Ser Cys Asn Asn
145 150 155 160

5189-2.ST25.txt

Phe Ile Tyr Gly Gly Cys Arg Gly Asn Lys Asn Ser Tyr Arg Ser Glu
165 170 175

Glu Ala Cys Met Leu Arg Cys Phe Arg Gln Gln Glu Asn Pro Pro Leu
180 185 190

Pro Leu Gly Ser Lys Val Val Val Leu Ala Gly Leu Phe Val Met Val
195 200 205

Leu Ile Leu Phe Leu Gly Ala Ser Met Val Tyr Leu Ile Arg Val Ala
210 215 220

Arg Arg Asn Gln Glu Arg Ala Leu Arg Thr Val Trp Ser Ser Gly Asp
225 230 235 240

Asp Lys Glu Gln Leu Val Lys Asn Thr Tyr Val Leu
245 250

<210> 73
<211> 2380
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (135)..(1043)
<223>

<400> 73
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gaggaagagg aggaggagga agaggggagc acaaaggatc caggtctccc gacgggaggt 120

taataccaag aacc atg tgt gcc gag cgg ctg ggc cag ttc atg acc ctg 170
Met Cys Ala Glu Arg Leu Gly Gln Phe Met Thr Leu
1 5 10

gct ttg gtg ttg gcc acc ttt gac ccg gcg cgg ggg acc gac gcc acc 218
Ala Leu Val Leu Ala Thr Phe Asp Pro Ala Arg Gly Thr Asp Ala Thr
15 20 25

aac cca ccc gag ggt ccc caa gac agg agc tcc cag cag aaa ggc cgc 266
Asn Pro Pro Glu Gly Pro Gln Asp Arg Ser Ser Gln Gln Lys Gly Arg
30 35 40

ctg tcc ctg cag aat aca gcg gag atc cag cac tgt ttg gtc aac gct 314
Leu Ser Leu Gln Asn Thr Ala Glu Ile Gln His Cys Leu Val Asn Ala
45 50 55 60

ggc gat gtg ggg tgt ggc gtg ttt gaa tgt ttc gag aac aac tct tgt 362
Gly Asp Val Gly Cys Gly Val Phe Glu Cys Phe Glu Asn Asn Ser Cys
65 70 75

gag att cgg ggc tta cat ggg att tgc atg act ttt ctg cac aac gct 410
Glu Ile Arg Glu Leu His Gly Ile Cys Met Thr Phe Leu His Asn Ala
80 85 90

5189-2.ST25.txt

gga aaa ttt gat gcc cag ggc aag tca ttc atc aaa gac gcc ttg aaa	458
Gly Lys Phe Asp Ala Gln Gly Lys Ser Phe Ile Lys Asp Ala Leu Lys	
95 100 105	
tgt aag gcc cac gct ctg cgg cac agg ttc ggc tgc ata agc cgg aag	506
Cys Lys Ala His Ala Leu Arg His Arg Phe Gly Cys Ile Ser Arg Lys	
110 115 120	
tgc ccg gcc atc agg gaa atg gtg tcc cag ttg cag cgg gaa tgc tac	554
Cys Pro Ala Ile Arg Glu Met Val Ser Gln Leu Gln Arg Glu Cys Tyr	
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Leu Lys His Asp Leu Cys Ala Ala Ala Gln Glu Asn Thr Arg Val Ile	
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Val Glu Met Ile His Phe Lys Asp Leu Leu Leu His Glu Pro Tyr Val	
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Asp Leu Val Asn Leu Leu Leu Thr Cys Gly Glu Glu Val Lys Glu Ala	
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atc acc cac agc gtg cag gtt cag tgt gag cag aac tgg gga agc ctg	746
Ile Thr His Ser Val Gln Val Gln Cys Glu Gln Asn Trp Gly Ser Leu	
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Cys Ser Ile Leu Ser Phe Cys Thr Ser Ala Ile Gln Lys Pro Pro Thr	
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Ala His His Gly Glu Ala Gly His His Leu Pro Glu Pro Ser Ser Arg	
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Glu Thr Gly Arg Gly Ala Lys Gly Glu Arg Gly Ser Lys Ser His Pro	
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Asn Ala His Ala Arg Gly Arg Val Gly Gly Leu Gly Ala Gln Gly Pro	
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5189-2.ST25.txt

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 20 25 30

Gly Pro Gln Asp Arg Ser Ser Gln Gln Lys Gly Arg Leu Ser Leu Gln
 35 40 45

Asn Thr Ala Glu Ile Gln His Cys Leu Val Asn Ala Gly Asp Val Gly
 50 55 60

Cys Gly Val Phe Glu Cys Phe Glu Asn Asn Ser Cys Glu Ile Arg Gly
 65 70 75 80

5189-2.ST25.txt

Leu His Gly Ile Cys Met Thr Phe Leu His Asn Ala Gly Lys Phe Asp
85 90 95

Ala Gln Gly Lys Ser Phe Ile Lys Asp Ala Leu Lys Cys Lys Ala His
100 105 110

Ala Leu Arg His Arg Phe Gly Cys Ile Ser Arg Lys Cys Pro Ala Ile
115 120 125

Arg Glu Met Val Ser Gln Leu Gln Arg Glu Cys Tyr Leu Lys His Asp
130 135 140

Leu Cys Ala Ala Ala Gln Glu Asn Thr Arg Val Ile Val Glu Met Ile
145 150 155 160

His Phe Lys Asp Leu Leu Leu His Glu Pro Tyr Val Asp Leu Val Asn
165 170 175

Leu Leu Leu Thr Cys Gly Glu Glu Val Lys Glu Ala Ile Thr His Ser
180 185 190

Val Gln Val Gln Cys Glu Gln Asn Trp Gly Ser Leu Cys Ser Ile Leu
195 200 205

Ser Phe Cys Thr Ser Ala Ile Gln Lys Pro Pro Thr Ala Pro Pro Glu
210 215 220

Arg Gln Pro Gln Val Asp Arg Thr Lys Leu Ser Arg Ala His His Gly
225 230 235 240

Glu Ala Gly His His Leu Pro Glu Pro Ser Ser Arg Glu Thr Gly Arg
245 250 255

Gly Ala Lys Gly Glu Arg Gly Ser Lys Ser His Pro Asn Ala His Ala
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Thr Gly Gln Val Leu Thr Cys Asp Lys Cys Pro Ala Gly Thr Tyr Val
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Ser Glu His Cys Thr Asn Thr Ser Leu Arg Val Cys Ser Ser Cys Pro
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Ala Leu Thr Asp Arg Glu Cys Thr Cys Pro Pro Gly Met Phe Gln Ser
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5189-2.ST25.txt

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ggc Gly	cat His	ggt Gly 415	atc Ile	gat Asp	atc Ile	ctg Leu	aag Lys 420	ctt Leu	gta Val	gca Ala	gcc Ala	caa Gln 425	gtg Val	gga Gly	agc Ser	1717
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5189-2.ST25.txt

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5189-2.ST25.txt

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 35 40 45

Asn Leu Ile Gly Thr Tyr Arg His Val Asp Arg Ala Thr Gly Gln Val
 50 55 60

Leu Thr Cys Asp Lys Cys Pro Ala Gly Thr Tyr Val Ser Glu His Cys
 65 70 75 80

Thr Asn Thr Ser Leu Arg Val Cys Ser Ser Cys Pro Val Gly Thr Phe
 85 90 95

5189-2.ST25.txt

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 130 135 140
 Ala Pro His Thr Val Cys Pro Val Gly Trp Gly Val Arg Lys Lys Gly
 145 150 155 160
 Thr Glu Thr Glu Asp Val Arg Cys Lys Gln Cys Ala Arg Gly Thr Phe
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 Ser Asp Val Pro Ser Ser Val Met Lys Cys Lys Ala Tyr Thr Asp Cys
 180 185 190
 Leu Ser Gln Asn Leu Val Val Ile Lys Pro Gly Thr Lys Glu Thr Asp
 195 200 205
 Asn Val Cys Gly Thr Leu Pro Ser Phe Ser Ser Ser Thr Ser Pro Ser
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 Pro Gly Thr Ala Ile Phe Pro Arg Pro Glu His Met Glu Thr His Glu
 225 230 235 240
 Val Pro Ser Ser Thr Tyr Val Pro Lys Gly Met Asn Ser Thr Glu Ser
 245 250 255
 Asn Ser Ser Ala Ser Val Arg Pro Lys Val Leu Ser Ser Ile Gln Glu
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 Gly Thr Val Pro Asp Asn Thr Ser Ser Ala Arg Gly Lys Glu Asp Val
 275 280 285
 Asn Lys Thr Leu Pro Asn Leu Gln Val Val Asn His Gln Gln Gly Pro
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 His His Arg His Ile Leu Lys Leu Leu Pro Ser Met Glu Ala Thr Gly
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 Gly Glu Lys Ser Ser Thr Pro Ile Lys Gly Pro Lys Arg Gly His Pro
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 Arg Gln Asn Leu His Lys His Phe Asp Ile Asn Glu His Leu Pro Trp
 340 345 350

5189-2.ST25.txt

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 Pro Ser Ala Ile Val Glu Lys Ala Gly Leu Lys Lys Ser Met Thr Pro
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 Thr Gln Asn Arg Glu Lys Trp Ile Tyr Tyr Cys Asn Gly His Gly Ile
 405 410 415
 Asp Ile Leu Lys Leu Val Ala Ala Gln Val Gly Ser Gln Trp Lys Asp
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 Ile Tyr Gln Phe Leu Cys Asn Ala Ser Glu Arg Glu Val Ala Ala Phe
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 Ser Asn Gly Tyr Thr Ala Asp His Glu Arg Ala Tyr Ala Ala Leu Gln
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 His Trp Thr Ile Arg Gly Pro Glu Ala Ser Leu Ala Gln Leu Ile Ser
 465 470 475 480
 Ala Leu Arg Gln His Arg Arg Asn Asp Val Val Glu Lys Ile Arg Gly
 485 490 495
 Leu Met Glu Asp Thr Thr Gln Leu Glu Thr Asp Lys Leu Ala Leu Pro
 500 505 510
 Met Ser Pro Ser Pro Leu Ser Pro Ser Pro Ile Pro Ser Pro Asn Ala
 515 520 525
 Lys Leu Glu Asn Ser Ala Leu Leu Thr Val Glu Pro Ser Pro Gln Asp
 530 535 540
 Lys Asn Lys Gly Phe Phe Val Asp Glu Ser Glu Pro Leu Leu Arg Cys
 545 550 555 560
 Asp Ser Thr Ser Ser Gly Ser Ser Ala Leu Ser Arg Asn Gly Ser Phe
 565 570 575
 Ile Thr Lys Glu Lys Lys Asp Thr Val Leu Arg Gln Val Arg Leu Asp
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 Pro Cys Asp Leu Gln Pro Ile Phe Asp Asp Met Leu His Phe Leu Asn
 595 600 605

5189-2.ST25.txt

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Met Arg Ala Leu
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Ala Asp Asp Glu Val Asp Val Asp Gly Thr Val Glu Glu Asp Leu Gly
25 30 35

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Lys Ser Arg Glu Gly Ser Arg Thr Asp Asp Glu Val Val Gln Arg Glu
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Glu Glu Ala Ile Gln Leu Asp Gly Leu Asn Ala Ser Gln Ile Arg Glu
55 60 65

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Leu Arg Glu Lys Ser Glu Lys Phe Ala Phe Gln Ala Glu Val Asn Arg
70 75 80

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Leu Arg Glu Leu Ile Ser Asn Ala Ser Asp Ala Leu Asp Lys Ile Arg
105 110 115

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Leu Ile Ser Leu Thr Asp Glu Asn Ala Leu Ser Gly Asn Glu Glu Leu
120 125 130

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Thr Val Lys Ile Lys Cys Asp Lys Glu Lys Asn Leu Leu His Val Thr
135 140 145

5189-2.ST25.txt

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gaa Glu	ttt Phe 230	tct Ser	gta Val	att Ile	gct Ala	gac Asp 235	cca Pro	aga Arg	gga Gly	aac Asn	act Thr 240	cta Leu	gga Gly	cgg Arg	gga Gly	837
acg Thr 245	aca Thr	att Ile	acc Thr	ctt Leu	gtc Val 250	tta Leu	aaa Lys	gaa Glu	gaa Glu	gca Ala 255	tct Ser	gat Asp	tac Tyr	ctt Leu	gaa Glu 260	885
ttg Leu	gat Asp	aca Thr	att Ile	aaa Lys 265	aat Asn	ctc Leu	gtc Val	aaa Lys	aaa Lys 270	tat Tyr	tca Ser	cag Gln	ttc Phe	ata Ile 275	aac Asn	933
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gaa Glu 310	gct Ala	gca Ala	gta Val	gag Glu	gaa Glu	gaa Glu 315	gaa Glu	gaa Glu	gaa Glu	aag Lys	aaa Lys 320	cca Pro	aag Lys	act Thr	aaa Lys	1077
aaa Lys 325	gtt Val	gaa Glu	aaa Lys	act Thr	gtc Val 330	tgg Trp	gac Asp	tgg Trp	gaa Glu	ctt Leu 335	atg Met	aat Asn	gat Asp	atc Ile	aaa Lys 340	1125
cca Pro	ata Ile	tgg Trp	cag Gln	aga Arg 345	cca Pro	tca Ser	aaa Lys	gaa Glu	gta Val 350	gaa Glu	gaa Glu	gat Asp	gaa Glu	tac Tyr 355	aaa Lys	1173
gct Ala	ttc Phe	tac Tyr	aaa Lys 360	tca Ser	ttt Phe	tca Ser	aag Lys	gaa Glu 365	agt Ser	gat Asp	gac Asp	ccc Pro	atg Met 370	gct Ala	tat Tyr	1221
att Ile	cac His	ttt Phe 375	act Thr	gct Ala	gaa Glu	ggg Gly	gaa Glu 380	gtt Val	acc Thr	ttc Phe	aaa Lys	tca Ser 385	att Ile	tta Leu	ttt Phe	1269
gta Val 390	ccc Pro	aca Thr	tct Ser	gct Ala	cca Pro	cgt Arg 395	ggt Gly	ctg Leu	ttt Phe	gac Asp	gaa Glu 400	tat Tyr	gga Gly	tct Ser	aaa Lys	1317

5189-2.ST25.txt

aag Lys 405	agc Ser	gat Asp	tac Tyr	att Ile	aag Lys 410	ctc Leu	tat Tyr	gtg Val	cgc Arg	cgt Arg 415	gta Val	ttc Phe	atc Ile	aca Thr	gac Asp 420	1365
gac Asp	ttc Phe	cat His	gat Asp	atg Met 425	atg Met	cct Pro	aaa Lys	tac Tyr	ctc Leu 430	aat Asn	ttt Phe	gtc Val	aag Lys	ggg Gly 435	gtg Val	1413
gtg Val	gac Asp	tca Ser	gat Asp 440	gat Asp	ctc Leu	ccc Pro	ttg Leu	aat Asn 445	ggt Val	tcc Ser	cgc Arg	gag Glu	act Thr 450	ctt Leu	cag Gln	1461
caa Gln	cat His	aaa Lys 455	ctg Leu	ctt Leu	aag Lys	gtg Val	att Ile 460	agg Arg	aag Lys	aag Lys	ctt Leu	gtt Val 465	cgt Arg	aaa Lys	acg Thr	1509
ctg Leu	gac Asp 470	atg Met	atc Ile	aag Lys	aag Lys	att Ile 475	gct Ala	gat Asp	gat Asp	aaa Lys	tac Tyr 480	aat Asn	gat Asp	act Thr	ttt Phe	1557
tgg Trp 485	aaa Lys	gaa Glu	ttt Phe	ggg Gly	acc Thr 490	aac Asn	atc Ile	aag Lys	ctt Leu	ggg Gly 495	gtg Val	att Ile	gaa Glu	gac Asp	cac His 500	1605
tcg Ser	aat Asn	cga Arg	aca Thr	cgt Arg 505	ctt Leu	gct Ala	aaa Lys	ctt Leu	ctt Leu 510	agg Arg	ttc Phe	cag Gln	tct Ser	tct Ser 515	cat His	1653
cat His	cca Pro	act Thr	gac Asp 520	att Ile	act Thr	agc Ser	cta Leu	gac Asp 525	cag Gln	tat Tyr	gtg Val	gaa Glu	aga Arg 530	atg Met	aag Lys	1701
gaa Glu	aaa Lys	caa Gln 535	gac Asp	aaa Lys	atc Ile	tac Tyr	ttc Phe 540	atg Met	gct Ala	ggg Gly	tcc Ser	agc Ser 545	aga Arg	aaa Lys	gag Glu	1749
gct Ala 550	gaa Glu	tct Ser	tct Ser	cca Pro	ttt Phe	gtt Val 555	gag Glu	cga Arg	ctt Leu	ctg Leu 560	aaa Lys	aag Lys	ggc Gly	tat Tyr	gaa Glu	1797
gtt Val 565	att Ile	tac Tyr	ctc Leu	aca Thr	gaa Glu 570	cct Pro	gtg Val	gat Asp	gaa Glu	tac Tyr 575	tgt Cys	att Ile	cag Gln	gcc Ala	ctt Leu 580	1845
ccc Pro	gaa Glu	ttt Phe	gat Asp	ggg Gly 585	aag Lys	agg Arg	ttc Phe	cag Gln	aat Asn 590	gtt Val	gcc Ala	aag Lys	gaa Glu	gga Gly 595	gtg Val	1893
aag Lys	ttc Phe	gat Asp	gaa Glu 600	agt Ser	gag Glu	aaa Lys	act Thr	aag Lys 605	gag Glu	agt Ser	cgt Arg	gaa Glu	gca Ala 610	gtt Val	gag Glu	1941
aaa Lys	gaa Glu	ttt Phe 615	gag Glu	cct Pro	ctg Leu	ctg Leu	aat Asn 620	tgg Trp	atg Met	aaa Lys	gat Asp	aaa Lys 625	gcc Ala	ctt Leu	aag Lys	1989
gac Asp	aag Lys 630	att Ile	gaa Glu	aag Lys	gct Ala	gtg Val 635	gtg Val	tct Ser	cag Gln	cgc Arg	ctg Leu 640	aca Thr	gaa Glu	tct Ser	ccg Pro	2037
tgt Cys 645	gct Ala	ttg Leu	gtg Val	gcc Ala	agc Ser 650	cag Gln	tac Tyr	gga Gly	tgg Trp	tct Ser 655	ggc Gly	aac Asn	atg Met	gag Glu	aga Arg 660	2085

5189-2.ST25.txt

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tac tat gcg agt cag aag aaa aca ttt gaa att aat ccc aga cac ccg	2181
Tyr Tyr Ala Ser Gln Lys Lys Thr Phe Glu Ile Asn Pro Arg His Pro	
	680
	685
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ctg atc aga gac atg ctt cga cga att aag gaa gat gaa gat gat aaa	2229
Leu Ile Arg Asp Met Leu Arg Arg Ile Lys Glu Asp Glu Asp Asp Lys	
	695
	700
	705
aca gtt ttg gat ctt gct gtg gtt ttg ttt gaa aca gca acg ctt cgg	2277
Thr Val Leu Asp Leu Ala Val Val Leu Phe Glu Thr Ala Thr Leu Arg	
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tca ggg tat ctt tta cca gac act aaa gca tat gga gat aga ata gaa	2325
Ser Gly Tyr Leu Leu Pro Asp Thr Lys Ala Tyr Gly Asp Arg Ile Glu	
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aga atg ctt cgc ctc agt ttg aac att gac cct gat gca aag gtg gaa	2373
Arg Met Leu Arg Leu Ser Leu Asn Ile Asp Pro Asp Ala Lys Val Glu	
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	750
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gaa gag ccc gaa gaa gaa cct gaa gag aca gca gaa gac aca aca gaa	2421
Glu Glu Pro Glu Glu Glu Pro Glu Glu Thr Ala Glu Asp Thr Thr Glu	
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	765
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gac aca gag caa gac gaa gat gaa gaa atg gat gtg gga aca gat gaa	2469
Asp Thr Glu Gln Asp Glu Asp Glu Glu Met Asp Val Gly Thr Asp Glu	
	775
	780
	785
gaa gaa gaa aca gca aag gaa tct aca gct gaa aaa gat gaa ttg taa	2517
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	795
	800
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<400> 78

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Glu Asp Leu Gly Lys Ser Arg Glu Gly Ser Arg Thr Asp Asp Glu Val
 35 40 45

5189-2.ST25.txt

Val Gln Arg Glu Glu Glu Ala Ile Gln Leu Asp Gly Leu Asn Ala Ser
 50 55 60
 Gln Ile Arg Glu Leu Arg Glu Lys Ser Glu Lys Phe Ala Phe Gln Ala
 65 70 75 80
 Glu Val Asn Arg Met Met Lys Leu Ile Ile Asn Ser Leu Tyr Lys Asn
 85 90 95
 Lys Glu Ile Phe Leu Arg Glu Leu Ile Ser Asn Ala Ser Asp Ala Leu
 100 105 110
 Asp Lys Ile Arg Leu Ile Ser Leu Thr Asp Glu Asn Ala Leu Ser Gly
 115 120 125
 Asn Glu Glu Leu Thr Val Lys Ile Lys Cys Asp Lys Glu Lys Asn Leu
 130 135 140
 Leu His Val Thr Asp Thr Gly Val Gly Met Thr Arg Glu Glu Leu Val
 145 150 155 160
 Lys Asn Leu Gly Thr Ile Ala Lys Ser Gly Thr Ser Glu Phe Leu Asn
 165 170 175
 Lys Met Thr Glu Ala Gln Glu Asp Gly Gln Ser Thr Ser Glu Leu Ile
 180 185 190
 Gly Gln Phe Gly Val Gly Phe Tyr Ser Ala Phe Leu Val Ala Asp Lys
 195 200 205
 Val Ile Val Thr Ser Lys His Asn Asn Asp Thr Gln His Ile Trp Glu
 210 215 220
 Ser Asp Ser Asn Glu Phe Ser Val Ile Ala Asp Pro Arg Gly Asn Thr
 225 230 235 240
 Leu Gly Arg Gly Thr Thr Ile Thr Leu Val Leu Lys Glu Glu Ala Ser
 245 250 255
 Asp Tyr Leu Glu Leu Asp Thr Ile Lys Asn Leu Val Lys Lys Tyr Ser
 260 265 270
 Gln Phe Ile Asn Phe Pro Ile Tyr Val Trp Ser Ser Lys Thr Glu Thr
 275 280 285
 Val Glu Glu Pro Met Glu Glu Glu Glu Ala Ala Lys Glu Glu Lys Glu
 290 295 300

5189-2.ST25.txt

Glu Ser Asp Asp Glu Ala Ala Val Glu Glu Glu Glu Glu Glu Lys Lys
 305 310 315 320
 Pro Lys Thr Lys Lys Val Glu Lys Thr Val Trp Asp Trp Glu Leu Met
 325 330 335
 Asn Asp Ile Lys Pro Ile Trp Gln Arg Pro Ser Lys Glu Val Glu Glu
 340 345 350
 Asp Glu Tyr Lys Ala Phe Tyr Lys Ser Phe Ser Lys Glu Ser Asp Asp
 355 360 365
 Pro Met Ala Tyr Ile His Phe Thr Ala Glu Gly Glu Val Thr Phe Lys
 370 375 380
 Ser Ile Leu Phe Val Pro Thr Ser Ala Pro Arg Gly Leu Phe Asp Glu
 385 390 395 400
 Tyr Gly Ser Lys Lys Ser Asp Tyr Ile Lys Leu Tyr Val Arg Arg Val
 405 410 415
 Phe Ile Thr Asp Asp Phe His Asp Met Met Pro Lys Tyr Leu Asn Phe
 420 425 430
 Val Lys Gly Val Val Asp Ser Asp Asp Leu Pro Leu Asn Val Ser Arg
 435 440 445
 Glu Thr Leu Gln Gln His Lys Leu Leu Lys Val Ile Arg Lys Lys Leu
 450 455 460
 Val Arg Lys Thr Leu Asp Met Ile Lys Lys Ile Ala Asp Asp Lys Tyr
 465 470 475 480
 Asn Asp Thr Phe Trp Lys Glu Phe Gly Thr Asn Ile Lys Leu Gly Val
 485 490 495
 Ile Glu Asp His Ser Asn Arg Thr Arg Leu Ala Lys Leu Leu Arg Phe
 500 505 510
 Gln Ser Ser His His Pro Thr Asp Ile Thr Ser Leu Asp Gln Tyr Val
 515 520 525
 Glu Arg Met Lys Glu Lys Gln Asp Lys Ile Tyr Phe Met Ala Gly Ser
 530 535 540
 Ser Arg Lys Glu Ala Glu Ser Ser Pro Phe Val Glu Arg Leu Leu Lys
 545 550 555 560

5189-2.ST25.txt

Lys Gly Tyr Glu Val Ile Tyr Leu Thr Glu Pro Val Asp Glu Tyr Cys
 565 570 575
 Ile Gln Ala Leu Pro Glu Phe Asp Gly Lys Arg Phe Gln Asn Val Ala
 580 585 590
 Lys Glu Gly Val Lys Phe Asp Glu Ser Glu Lys Thr Lys Glu Ser Arg
 595 600 605
 Glu Ala Val Glu Lys Glu Phe Glu Pro Leu Leu Asn Trp Met Lys Asp
 610 615 620
 Lys Ala Leu Lys Asp Lys Ile Glu Lys Ala Val Val Ser Gln Arg Leu
 625 630 635 640
 Thr Glu Ser Pro Cys Ala Leu Val Ala Ser Gln Tyr Gly Trp Ser Gly
 645 650 655
 Asn Met Glu Arg Ile Met Lys Ala Gln Ala Tyr Gln Thr Gly Lys Asp
 660 665 670
 Ile Ser Thr Asn Tyr Tyr Ala Ser Gln Lys Lys Thr Phe Glu Ile Asn
 675 680 685
 Pro Arg His Pro Leu Ile Arg Asp Met Leu Arg Arg Ile Lys Glu Asp
 690 695 700
 Glu Asp Asp Lys Thr Val Leu Asp Leu Ala Val Val Leu Phe Glu Thr
 705 710 715 720
 Ala Thr Leu Arg Ser Gly Tyr Leu Leu Pro Asp Thr Lys Ala Tyr Gly
 725 730 735
 Asp Arg Ile Glu Arg Met Leu Arg Leu Ser Leu Asn Ile Asp Pro Asp
 740 745 750
 Ala Lys Val Glu Glu Glu Pro Glu Glu Glu Pro Glu Glu Thr Ala Glu
 755 760 765
 Asp Thr Thr Glu Asp Thr Glu Gln Asp Glu Asp Glu Glu Met Asp Val
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 Gly Thr Asp Glu Glu Glu Glu Thr Ala Lys Glu Ser Thr Ala Glu Lys
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5189-2.ST25.txt

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 Met Val Val Pro Glu Lys Glu Gln Ser Trp Ile Pro Lys
 1 5 10
 atc ttc aag aag aag acc tgc acg acg ttc ata gtt gac tcc aca gat 159
 Ile Phe Lys Lys Lys Thr Cys Thr Thr Phe Ile Val Asp Ser Thr Asp
 15 20 25
 ccg gga ggg acc ttg tgc cag tgt ggg cgc ccc cgg acc gcc cac ccc 207
 Pro Gly Gly Thr Leu Cys Gln Cys Gly Arg Pro Arg Thr Ala His Pro
 30 35 40 45
 gca gtg gcc atg gag gat gcc ttc ggg gca gcc gtg gtg acc gtg tgg 255
 Ala Val Ala Met Glu Asp Ala Phe Gly Ala Ala Val Val Thr Val Trp
 50 55 60
 gac agc gat gca cac acc acg gag aag ccc acc gat gcc tac gga gag 303
 Asp Ser Asp Ala His Thr Thr Glu Lys Pro Thr Asp Ala Tyr Gly Glu
 65 70 75
 ctg gac ttc acg ggg gcc ggc cgc aag cac agc aat ttc ctc cgg ctc 351
 Leu Asp Phe Thr Gly Ala Gly Arg Lys His Ser Asn Phe Leu Arg Leu
 80 85 90
 tct gac cga acg gat cca gct gca gtt tat agt ctg gtc aca cgc aca 399
 Ser Asp Arg Thr Asp Pro Ala Val Tyr Ser Leu Val Thr Arg Thr
 95 100 105
 tgg ggc ttc cgt gcc ccg aac ctg gtg gtg tca gtg ctg ggg gga tcg 447
 Trp Gly Phe Arg Ala Pro Asn Leu Val Val Ser Val Leu Gly Gly Ser
 110 115 120 125
 ggg ggc ccc gtc ctc cag acc tgg ctg cag gac ctg ctg cgt cgt ggg 495
 Gly Gly Pro Val Leu Gln Thr Trp Leu Gln Asp Leu Leu Arg Arg Gly
 130 135 140
 ctg gtg cgg gct gcc cag agc aca gga gcc tgg att gtc act ggg ggt 543
 Leu Val Arg Ala Ala Gln Ser Thr Gly Ala Trp Ile Val Thr Gly Gly
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 Leu His Thr Gly Ile Gly Arg His Val Gly Val Ala Val Arg Asp His
 160 165 170
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 Gln Met Ala Ser Thr Gly Gly Thr Lys Val Val Ala Met Gly Val Ala
 175 180 185
 ccc tgg ggt gtg gtc cgg aat aga gac acc ctc atc aac ccc aag ggc 687
 Pro Trp Gly Val Val Arg Asn Arg Asp Thr Leu Ile Asn Pro Lys Gly
 190 195 200 205

5189-2.ST25.txt

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Ser	Phe	Pro	Ala	Arg	Tyr	Arg	Trp	Arg	Gly	Asp	Pro	Glu	Asp	Gly	Val	
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cag	ttt	ccc	ctg	gac	tac	aac	tac	tcg	gcc	ttc	ttc	ctg	gtg	gac	gac	783
Gln	Phe	Pro	Leu	Asp	Tyr	Asn	Tyr	Ser	Ala	Phe	Phe	Leu	Val	Asp	Asp	
			225					230					235			
ggc	aca	cac	ggc	tgc	ctg	ggg	ggc	gag	aac	cgc	ttc	cgc	ttg	cgc	ctg	831
Gly	Thr	His	Gly	Cys	Leu	Gly	Gly	Glu	Asn	Arg	Phe	Arg	Leu	Arg	Leu	
		240					245					250				
gag	tcc	tac	atc	tca	cag	cag	aag	acg	ggc	gtg	gga	ggg	act	gga	att	879
Glu	Ser	Tyr	Ile	Ser	Gln	Gln	Lys	Thr	Gly	Val	Gly	Gly	Thr	Gly	Ile	
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gac	atc	cct	gtc	ctg	ctc	ctc	ctg	att	gat	ggt	gat	gag	aag	atg	ttg	927
Asp	Ile	Pro	Val	Leu	Leu	Leu	Leu	Ile	Asp	Gly	Asp	Glu	Lys	Met	Leu	
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acg	cga	ata	gag	aac	gcc	acc	cag	gct	cag	ctc	cca	tgt	ctc	ctc	gtg	975
Thr	Arg	Ile	Glu	Asn	Ala	Thr	Gln	Ala	Gln	Leu	Pro	Cys	Leu	Leu	Val	
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gct	ggc	tca	ggg	gga	gct	gcg	gac	tgc	ctg	gcg	gag	acc	ctg	gaa	gac	1023
Ala	Gly	Ser	Gly	Gly	Ala	Ala	Asp	Cys	Leu	Ala	Glu	Thr	Leu	Glu	Asp	
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Thr	Leu	Ala	Pro	Gly	Ser	Gly	Gly	Ala	Arg	Gln	Gly	Glu	Ala	Arg	Asp	
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Arg	Ile	Arg	Arg	Phe	Phe	Pro	Lys	Gly	Asp	Leu	Glu	Val	Leu	Gln	Ala	
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Gln	Val	Glu	Arg	Ile	Met	Thr	Arg	Lys	Glu	Leu	Leu	Thr	Val	Tyr	Ser	
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Ser	Glu	Asp	Gly	Ser	Glu	Glu	Phe	Glu	Thr	Ile	Val	Leu	Lys	Ala	Leu	
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Val	Lys	Ala	Cys	Gly	Ser	Ser	Glu	Ala	Ser	Ala	Tyr	Leu	Asp	Glu	Leu	
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cgt	ttg	gct	gtg	gct	tgg	aac	cgc	gtg	gac	att	gcc	cag	agt	gaa	ctc	1311
Arg	Leu	Ala	Val	Ala	Trp	Asn	Arg	Val	Asp	Ile	Ala	Gln	Ser	Glu	Leu	
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Phe	Arg	Gly	Asp	Ile	Gln	Trp	Arg	Ser	Phe	His	Leu	Glu	Ala	Ser	Leu	
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Met	Asp	Ala	Leu	Leu	Asn	Asp	Arg	Pro	Glu	Phe	Val	Arg	Leu	Leu	Ile	
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Ser	His	Gly	Leu	Ser	Leu	Gly	His	Phe	Leu	Thr	Pro	Met	Arg	Leu	Ala	
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5189-2.ST25.txt

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Gly	Ala	Ala	Glu	Leu	Arg	Pro	Pro	Asp	Val	Gly	His	Val	Leu	Arg	Met	
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Pro	Trp	Ser	Asp	Leu	Leu	Leu	Trp	Ala	Leu	Leu	Leu	Asn	Arg	Ala	Gln	
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Leu	Gly	Ala	Cys	Leu	Leu	Leu	Arg	Val	Met	Ala	Arg	Leu	Glu	Pro	Asp	
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Met	Gly	Val	Asp	Leu	Phe	Gly	Glu	Cys	Tyr	Arg	Ser	Ser	Glu	Val	Arg	
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Cys	Leu	Gln	Leu	Ala	Met	Gln	Ala	Asp	Ala	Arg	Ala	Phe	Phe	Ala	Gln	
	655					660					665					
gat	ggg	gta	cag	tct	ctg	ctg	aca	cag	aag	tgg	tgg	gga	gat	atg	gcc	2127
Asp	Gly	Val	Gln	Ser	Leu	Leu	Thr	Gln	Lys	Trp	Trp	Gly	Asp	Met	Ala	
670					675					680					685	
agc	act	aca	ccc	atc	tgg	gcc	ctg	gtt	ctc	gcc	ttc	ttt	tgc	cct	cca	2175
Ser	Thr	Thr	Pro	Ile	Trp	Ala	Leu	Val	Leu	Ala	Phe	Phe	Cys	Pro	Pro	
				690					695					700		
ctc	atc	tac	acc	cgc	ctc	atc	acc	ttc	agg	aaa	tca	gaa	gag	gag	ccc	2223
Leu	Ile	Tyr	Thr	Arg	Leu	Ile	Thr	Phe	Arg	Lys	Ser	Glu	Glu	Glu	Pro	
			705					710					715			

5189-2.ST25.txt

aca cgg gag gag cta gag ttt gac atg gat agt gtc att aat ggg gaa	2271
Thr Arg Glu Glu Leu Glu Phe Asp Met Asp Ser Val Ile Asn Gly Glu	
720 725 730	
ggg cct gtc ggg acg gcg gac cca gcc gag aag acg ccg ctg ggg gtc	2319
Gly Pro Val Gly Thr Ala Asp Pro Ala Glu Lys Thr Pro Leu Gly Val	
735 740 745	
ccg cgc cag tcg ggc cgt ccg ggt tgc tgc ggg ggc cgc tgc ggg ggg	2367
Pro Arg Gln Ser Gly Arg Pro Gly Cys Cys Gly Gly Arg Cys Gly Gly	
750 755 760 765	
cgc cgg tgc cta cgc cgc tgg ttc cac ttc tgg ggc gcg ccg gtg acc	2415
Arg Arg Cys Leu Arg Arg Trp Phe His Phe Trp Gly Ala Pro Val Thr	
770 775 780	
atc ttc atg ggc aac gtg gtc agc tac ctg ctg ttc ctg ctg ctt ttc	2463
Ile Phe Met Gly Asn Val Val Ser Tyr Leu Leu Phe Leu Leu Leu Phe	
785 790 795	
tcg cgg gtg ctg ctc gtg gat ttc cag ccg gcg ccg ccc ggc tcc ctg	2511
Ser Arg Val Leu Leu Val Asp Phe Gln Pro Ala Pro Gly Ser Leu	
800 805 810	
gag ctg ctg ctc tat ttc tgg gct ttc acg ctg ctg tgc gag gaa ctg	2559
Glu Leu Leu Leu Tyr Phe Trp Ala Phe Thr Leu Leu Cys Glu Glu Leu	
815 820 825	
cgc cag ggc ctg agc gga ggc ggg ggc agc ctc gcc agc ggg ggc ccc	2607
Arg Gln Gly Leu Ser Gly Gly Gly Gly Ser Leu Ala Ser Gly Gly Pro	
830 835 840 845	
ggg cct ggc cat gcc tca ctg agc cag cgc ctg cgc ctc tac ctc gcc	2655
Gly Pro Gly His Ala Ser Leu Ser Gln Arg Leu Arg Leu Tyr Leu Ala	
850 855 860	
gac agc tgg aac cag tgc gac cta gtg gct ctc acc tgc ttc ctc ctg	2703
Asp Ser Trp Asn Gln Cys Asp Leu Val Ala Leu Thr Cys Phe Leu Leu	
865 870 875	
ggc gtg ggc tgc cgg ctg acc ccg ggt ttg tac cac ctg ggc cgc act	2751
Gly Val Gly Cys Arg Leu Thr Pro Gly Leu Tyr His Leu Gly Arg Thr	
880 885 890	
gtc ctc tgc atc gac ttc atg gtt ttc acg gtg cgg ctg ctt cac atc	2799
Val Leu Cys Ile Asp Phe Met Val Phe Thr Val Arg Leu Leu His Ile	
895 900 905	
ttc acg gtc aac aaa cag ctg ggg ccc aag atc gtc atc gtg agc aag	2847
Phe Thr Val Asn Lys Gln Leu Gly Pro Lys Ile Val Ile Val Ser Lys	
910 915 920 925	
atg atg aag gac gtg ttc ttc ttc ctc ttc ttc ctc ggc gtg tgg ctg	2895
Met Met Lys Asp Val Phe Phe Phe Leu Phe Phe Leu Gly Val Trp Leu	
930 935 940	
gta gcc tat ggc gtg gcc acg gag ggg ctc ctg agg cca cgg gac agt	2943
Val Ala Tyr Gly Val Ala Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser	
945 950 955	
gac ttc cca agt atc ctg cgc cgc gtc ttc tac cgt ccc tac ctg cag	2991
Asp Phe Pro Ser Ile Leu Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln	
960 965 970	

5189-2.ST25.txt

atc ttc ggg cag att ccc cag gag gac atg gac gtg gcc ctc atg gag Ile Phe Gly Gln Ile Pro Gln Glu Asp Met Asp Val Ala Leu Met Glu 975 980 985	3039
cac agc aac tgc tcg tcg gag ccc ggc ttc tgg gca cac cct cct ggg His Ser Asn Cys Ser Ser Glu Pro Gly Phe Trp Ala His Pro Pro Gly 990 995 1000 1005	3087
gcc cag gcg ggc acc tgc gtc tcc cag tat gcc aac tgg ctg gtg Ala Gln Ala Gly Thr Cys Val Ser Gln Tyr Ala Asn Trp Leu Val 1010 1015 1020	3132
gtg ctg ctc ctc gtc atc ttc ctg ctc gtg gcc aac atc ctg ctg Val Leu Leu Leu Val Ile Phe Leu Leu Val Ala Asn Ile Leu Leu 1025 1030 1035	3177
gtc aac ttg ctc att gcc atg ttc agt tac aca ttc ggc aaa gta Val Asn Leu Leu Ile Ala Met Phe Ser Tyr Thr Phe Gly Lys Val 1040 1045 1050	3222
cag ggc aac agc gat ctc tac tgg aag gcg cag cgt tac cgc ctc Gln Gly Asn Ser Asp Leu Tyr Trp Lys Ala Gln Arg Tyr Arg Leu 1055 1060 1065	3267
atc cgg gaa ttc cac tct cgg ccc gcg ctg gcc ccg ccc ttt atc Ile Arg Glu Phe His Ser Arg Pro Ala Leu Ala Pro Pro Phe Ile 1070 1075 1080	3312
gtc atc tcc cac ttg cgc ctc ctg ctc agg caa ttg tgc agg cga Val Ile Ser His Leu Arg Leu Leu Leu Arg Gln Leu Cys Arg Arg 1085 1090 1095	3357
ccc cgg agc ccc cag ccg tcc tcc ccg gcc ctc gag cat ttc cgg Pro Arg Ser Pro Gln Pro Ser Ser Pro Ala Leu Glu His Phe Arg 1100 1105 1110	3402
gtt tac ctt tct aag gaa gcc gag cgg aag ctg cta acg tgg gaa Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr Trp Glu 1115 1120 1125	3447
tcg gtg cat aag gag aac ttt ctg ctg gca cgc gct agg gac aag Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp Lys 1130 1135 1140	3492
cgg gag agc gac tcc gag cgt ctg aag cgc acg tcc cag aag gtg Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val 1145 1150 1155	3537
gac ttg gca ctg aaa cag ctg gga cac atc cgc gag tac gaa cag Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln 1160 1165 1170	3582
cgc ctg aaa gtg ctg gag cgg gag gtc cag cag tgt agc cgc gtc Arg Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val 1175 1180 1185	3627
ctg ggg tgg gtg gcc gag gcc ctg agc cgc tct gcc ttg ctg ccc Leu Gly Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro 1190 1195 1200	3672
cca ggt ggg ccg cca ccc cct gac ctg cct ggg tcc aaa gac tga Pro Gly Gly Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp	3717

5189-2.ST25.txt

gccctgctgg cggacttcaa ggagaagccc ccacagggga ttttgctcct agagtaaggc 3777
 tcatctgggc ctcggccccc gcacctggtg gccttgctcct tgaggtgagc cccatgtcca 3837
 tctgggccac tgtcaggacc acctttggga gtgtcatcct tacaaccac agcatgcccg 3897
 gctcctccca gaaccagtcc cagcctggga ggatcaaggc ctggatcccg ggccggtatc 3957
 catctggagg ctgcagggtc cttggggtaa cagggaccac agaccctca ccactcacag 4017
 attcctcaca ctggggaaat aaagccattt cagaggaaaa aaaa 4061

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Lys Lys Thr Cys Thr Thr Phe Ile Val Asp Ser Thr Asp Pro Gly Gly
 20 25 30

Thr Leu Cys Gln Cys Gly Arg Pro Arg Thr Ala His Pro Ala Val Ala
 35 40 45

Met Glu Asp Ala Phe Gly Ala Ala Val Val Thr Val Trp Asp Ser Asp
 50 55 60

Ala His Thr Thr Glu Lys Pro Thr Asp Ala Tyr Gly Glu Leu Asp Phe
 65 70 75 80

Thr Gly Ala Gly Arg Lys His Ser Asn Phe Leu Arg Leu Ser Asp Arg
 85 90 95

Thr Asp Pro Ala Ala Val Tyr Ser Leu Val Thr Arg Thr Trp Gly Phe
 100 105 110

Arg Ala Pro Asn Leu Val Val Ser Val Leu Gly Gly Ser Gly Gly Pro
 115 120 125

Val Leu Gln Thr Trp Leu Gln Asp Leu Leu Arg Arg Gly Leu Val Arg
 130 135 140

Ala Ala Gln Ser Thr Gly Ala Trp Ile Val Thr Gly Gly Leu His Thr
 145 150 155 160

Gly Ile Gly Arg His Val Gly Val Ala Val Arg Asp His Gln Met Ala
 165 170 175

5189-2.ST25.txt

Ser Thr Gly Gly Thr Lys Val Val Ala Met Gly Val Ala Pro Trp Gly
 180 185 190
 Val Val Arg Asn Arg Asp Thr Leu Ile Asn Pro Lys Gly Ser Phe Pro
 195 200 205
 Ala Arg Tyr Arg Trp Arg Gly Asp Pro Glu Asp Gly Val Gln Phe Pro
 210 215 220
 Leu Asp Tyr Asn Tyr Ser Ala Phe Phe Leu Val Asp Asp Gly Thr His
 225 230 235 240
 Gly Cys Leu Gly Gly Glu Asn Arg Phe Arg Leu Arg Leu Glu Ser Tyr
 245 250 255
 Ile Ser Gln Gln Lys Thr Gly Val Gly Gly Thr Gly Ile Asp Ile Pro
 260 265 270
 Val Leu Leu Leu Leu Ile Asp Gly Asp Glu Lys Met Leu Thr Arg Ile
 275 280 285
 Glu Asn Ala Thr Gln Ala Gln Leu Pro Cys Leu Leu Val Ala Gly Ser
 290 295 300
 Gly Gly Ala Ala Asp Cys Leu Ala Glu Thr Leu Glu Asp Thr Leu Ala
 305 310 315 320
 Pro Gly Ser Gly Gly Ala Arg Gln Gly Glu Ala Arg Asp Arg Ile Arg
 325 330 335
 Arg Phe Phe Pro Lys Gly Asp Leu Glu Val Leu Gln Ala Gln Val Glu
 340 345 350
 Arg Ile Met Thr Arg Lys Glu Leu Leu Thr Val Tyr Ser Ser Glu Asp
 355 360 365
 Gly Ser Glu Glu Phe Glu Thr Ile Val Leu Lys Ala Leu Val Lys Ala
 370 375 380
 Cys Gly Ser Ser Glu Ala Ser Ala Tyr Leu Asp Glu Leu Arg Leu Ala
 385 390 395 400
 Val Ala Trp Asn Arg Val Asp Ile Ala Gln Ser Glu Leu Phe Arg Gly
 405 410 415
 Asp Ile Gln Trp Arg Ser Phe His Leu Glu Ala Ser Leu Met Asp Ala
 420 425 430

5189-2.ST25.txt

Leu Leu Asn Asp Arg Pro Glu Phe Val Arg Leu Leu Ile Ser His Gly
 435 440 445
 Leu Ser Leu Gly His Phe Leu Thr Pro Met Arg Leu Ala Gln Leu Tyr
 450 455 460
 Ser Ala Ala Pro Ser Asn Ser Leu Ile Arg Asn Leu Leu Asp Gln Ala
 465 470 475 480
 Ser His Ser Ala Gly Thr Lys Ala Pro Ala Leu Lys Gly Gly Ala Ala
 485 490 495
 Glu Leu Arg Pro Pro Asp Val Gly His Val Leu Arg Met Leu Leu Gly
 500 505 510
 Lys Met Cys Ala Pro Arg Tyr Pro Ser Gly Gly Ala Trp Asp Pro His
 515 520 525
 Pro Gly Gln Gly Phe Gly Glu Ser Met Tyr Leu Leu Ser Asp Lys Ala
 530 535 540
 Thr Ser Pro Leu Ser Leu Asp Ala Gly Leu Gly Gln Ala Pro Trp Ser
 545 550 555 560
 Asp Leu Leu Leu Trp Ala Leu Leu Leu Asn Arg Ala Gln Met Ala Met
 565 570 575
 Tyr Phe Trp Glu Met Gly Ser Asn Ala Val Ser Ser Ala Leu Gly Ala
 580 585 590
 Cys Leu Leu Leu Arg Val Met Ala Arg Leu Glu Pro Asp Ala Glu Glu
 595 600 605
 Ala Ala Arg Arg Lys Asp Leu Ala Phe Lys Phe Glu Gly Met Gly Val
 610 615 620
 Asp Leu Phe Gly Glu Cys Tyr Arg Ser Ser Glu Val Arg Ala Ala Arg
 625 630 635 640
 Leu Leu Leu Arg Arg Cys Pro Leu Trp Gly Asp Ala Thr Cys Leu Gln
 645 650 655
 Leu Ala Met Gln Ala Asp Ala Arg Ala Phe Phe Ala Gln Asp Gly Val
 660 665 670
 Gln Ser Leu Leu Thr Gln Lys Trp Trp Gly Asp Met Ala Ser Thr Thr
 675 680 685

5189-2.ST25.txt

Pro Ile Trp Ala Leu Val Leu Ala Phe Phe Cys Pro Pro Leu Ile Tyr
 690 695 700
 Thr Arg Leu Ile Thr Phe Arg Lys Ser Glu Glu Glu Pro Thr Arg Glu
 705 710 715 720
 Glu Leu Glu Phe Asp Met Asp Ser Val Ile Asn Gly Glu Gly Pro Val
 725 730 735
 Gly Thr Ala Asp Pro Ala Glu Lys Thr Pro Leu Gly Val Pro Arg Gln
 740 745 750
 Ser Gly Arg Pro Gly Cys Cys Gly Gly Arg Cys Gly Gly Arg Arg Cys
 755 760 765
 Leu Arg Arg Trp Phe His Phe Trp Gly Ala Pro Val Thr Ile Phe Met
 770 775 780
 Gly Asn Val Val Ser Tyr Leu Leu Phe Leu Leu Leu Phe Ser Arg Val
 785 790 795 800
 Leu Leu Val Asp Phe Gln Pro Ala Pro Pro Gly Ser Leu Glu Leu Leu
 805 810 815
 Leu Tyr Phe Trp Ala Phe Thr Leu Leu Cys Glu Glu Leu Arg Gln Gly
 820 825 830
 Leu Ser Gly Gly Gly Gly Ser Leu Ala Ser Gly Gly Pro Gly Pro Gly
 835 840 845
 His Ala Ser Leu Ser Gln Arg Leu Arg Leu Tyr Leu Ala Asp Ser Trp
 850 855 860
 Asn Gln Cys Asp Leu Val Ala Leu Thr Cys Phe Leu Leu Gly Val Gly
 865 870 875 880
 Cys Arg Leu Thr Pro Gly Leu Tyr His Leu Gly Arg Thr Val Leu Cys
 885 890 895
 Ile Asp Phe Met Val Phe Thr Val Arg Leu Leu His Ile Phe Thr Val
 900 905 910
 Asn Lys Gln Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys
 915 920 925
 Asp Val Phe Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr
 930 935 940

5189-2.ST25.txt

Gly Val Ala Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro
945 950 955 960

Ser Ile Leu Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly
965 970 975

Gln Ile Pro Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn
980 985 990

Cys Ser Ser Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala
995 1000 1005

Gly Thr Cys Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu
1010 1015 1020

Leu Val Ile Phe Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu
1025 1030 1035

Leu Ile Ala Met Phe Ser Tyr Thr Phe Gly Lys Val Gln Gly Asn
1040 1045 1050

Ser Asp Leu Tyr Trp Lys Ala Gln Arg Tyr Arg Leu Ile Arg Glu
1055 1060 1065

Phe His Ser Arg Pro Ala Leu Ala Pro Pro Phe Ile Val Ile Ser
1070 1075 1080

His Leu Arg Leu Leu Leu Arg Gln Leu Cys Arg Arg Pro Arg Ser
1085 1090 1095

Pro Gln Pro Ser Ser Pro Ala Leu Glu His Phe Arg Val Tyr Leu
1100 1105 1110

Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr Trp Glu Ser Val His
1115 1120 1125

Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp Lys Arg Glu Ser
1130 1135 1140

Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val Asp Leu Ala
1145 1150 1155

Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg Leu Lys
1160 1165 1170

Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly Trp
1175 1180 1185

5189-2.ST25.txt

Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro Pro Gly Gly
 1190 1195 1200

Pro Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp
 1205 1210

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5189-2.ST25.txt

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5189-2.ST25.txt

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5189-2.ST25.txt

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<400> 103

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21

<210> 104

<211> 30

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<400> 104

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gaaaggaccc gtcgcatgg gccgt 25

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